

COMPUTERWORLD

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Photo by Fred R. Conrad/New York Times

The Story of the System

'Unique' is how Atlanta DP Director Samit Roy described the computer system that helped track down and convict Wayne Williams on charges that he murdered two of the 28 children who disappeared in a 22-month period. That system will soon be available to law enforcement agencies throughout the country. Story on Page 5.

Judge Modifies But OKs U.S. vs. AT&T Settlement

By Jake Kirchner

CW Washington Bureau

WASHINGTON, D.C. — AT&T got a major boost in its bid to enter previously prohibited DP businesses when a federal judge last week approved the basic terms of the proposed settlement of the government's antitrust suit against Bell.

Reactions to the judge's action were guarded but generally favorable (story on Page 2).

The settlement agreement, with several additional, specific modifications, is clearly in the public interest, presiding U.S. District Court Judge Harold H. Greene said, and would allow AT&T to become "a vigorous competitor in the growing computer, computer-related and information markets."

Although Greene's decision does contain several provisions outside of or counter to the agreement suggested by the Justice Department and AT&T, the thrust of the proposed settlement was preserved.

Specifically, Greene approved the plan to have AT&T divest itself of its 22 local Bell operating companies in exchange for the right to enter sophisticated DP/telecommunications markets that had previously been closed to the company. That proposal was the centerpiece of the settlement announced by the Justice Department Jan. 8, stopping the eight-year-old suit after one year of trial.

Greene's 178-page decision, issued last Wednesday, approved that plan, adding a few new wrinkles to the complicated settlement procedure. In particular, Greene rejected proposals to prohibit the newly independent operating companies from marketing terminal equipment and to allow AT&T to maintain control of the lucrative Yellow Pages business.

Greene ruled that the operating companies should be allowed to sell but not manufacture telephone equipment. He also said the prohibition against directory production by the operating companies would be "distinctly anti-competitive."

An additional change by Greene would bar AT&T from offering electronic publishing services over its own transmission facilities, a provision widely supported by Congress in its ongoing efforts to restructure the U.S. telecommunications industry through legislation.

In a major departure from the Justice Department-AT&T settlement scenario, Greene said he would not permit implementation of the divestiture plan without his explicit approval. The parties in the lawsuit had hoped implementation de-

(Continued on Page 2)

MTC Workstation Supports Systems Analysts

By Lois Paul

CW Staff

SOUTHFIELD, Mich. — A professional workstation intended to address the productivity bottlenecks faced by systems analysts has been introduced by Multiple Technologies Corp.

The workstation was developed to improve the productivity of design analysts by automating the creation and maintenance of design documents. Users can be shown various layers of a project design, from system flowcharts to source code for program

segments of the system. The completed work is in machine-readable form and can be stored and recalled for reuse of design, the vendor noted.

The MTC2000 consists of a 16-bit Intel Corp. 8086 microprocessor-based system with up to 1M byte of addressable memory, a real-time multitasking operating system and software developed by MTC for interactive creation and maintenance of graphics and word processing. It offers optional host communications links with IBM and plug-compatible mainframes via

IBM 2780/3780 emulation, as well as 3270 emulation capability.

The workstation includes a 102-key detached keyboard and system software to provide single-keystroke manipulation of commonly used design and documentation symbols, according to an MTC spokesman. The MTC2000 displays graphics symbols and text on a 15-in. CRT display with 132 columns by 34 lines.

Vertical and horizontal scrolling offers the user more flexibility in the layout

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Product Spotlight

CBMS Offer a Way to Stop Telephone Interruptions

By Bruce Hoard

CW Staff

Ticked off by telephone tag? Piqued by pointless palavers? Ill at ease with being ill-informed?

Relax, the technology turnpike has another high-speed acronym for you. This one is CBMS, which stands for "computer-based message systems."

Some experts say CBMS can save up to an hour of wasted telephone time daily, cut down on frivolous phone conversations and boost personal productivity by increasing personal knowledge. Some don't. The jury is still out.

You may be one of the countless thousands who confuse CBMS with its more publicized forebear, electronic mail. The two are closely related, but CBMS is

only one category of electronic mail, as are telex, TWX and facsimile transmissions.

According to John Callahan, research director at In-

formation Technology Research in Cohasset, Mass., the big difference between CBMS and its communications cousins is that telex, TWX and others are "place-oriented." That means a message is transmitted outside the sender's company to a single destination, and that destination is the only place it can be read.

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She Left Roost, Climbed Ladder

By Marcia Blumenthal

CW Staff

NEW YORK — It took Patricia G. Karolchik 13 years to leave the roost of technical project management at Texaco Co., but since she moved into American Express Co.'s executive suite a little more than four years ago, her career has been on a fast track.

Next month Karolchik heads for Brighton, England, to take on her fourth assignment with American Express, this time as vice-president of systems planning and development for American Express' Consumer and Financial Services Group in

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CW Photo by M. Blumenthal

Patricia G. Karolchik



TM reg. U.S. Pat. Off.

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Judge's Changes Viewed Favorably

By Bruce Hoard
 CW Staff

WASHINGTON, D.C. — U.S. District Court Judge Harold H. Greene's changes to the proposed settlement of the U.S. vs. AT&T antitrust case drew generally favorable, if guarded, remarks from parties closely associated with the case.

Noting that Greene gave AT&T 15 days to consult with the Justice Department on his decision, an AT&T spokeswoman said it was too early to reach any conclusions on the changes. Quoting AT&T Chairman Charles L. Brown, she said the company is pleased with the court's overall finding that the agreement is

"plainly in the public's interest."

Bell critic U.S. Rep. Tim Wirth (D-Colo.) praised Greene's modifications of the antitrust agreement, but made it clear that more long-term changes are needed in U.S. telecommunications policy.

Wirth, who recently gave up trying to draft a new national telecommunications policy, issued a statement that said, "I am pleased that Judge Greene shares the view of myself and so many other members of Congress that while the settlement as proposed will significantly enhance competition in the telecommunications industry, it also needed major changes."

Local telephone rates would be kept "reasonable" if the Bell operating companies continue publishing the Yellow Pages, which bring in "over \$3 billion annually," Wirth added.

However, the congressman was critical of the government's failure to force Bell to evaluate its assets prior to its divestiture. He also reissued his call for a national telecommunications policy, calling Greene's changes only a "step" toward his goal of a sweeping, congressionally enacted federal telecommunications policy.

William Page Montgomery, vice-president of the Boston consulting firm Economics and Technology, Inc., said "all in all, it's a very beneficial set of changes." Asked how he thought the Justice Department will react, Montgomery said it will probably accept the changes because, if it doesn't, it runs "the risk of walking away from eight years of effort with nothing to show for it."

If AT&T management were to object to the changes, it would put itself in the position of playing off the prospective interests of the shareholders of the divested operating companies against the interests of AT&T shareholders, he said.

Judge Modifies Settlement

(Continued from Page 1)

tails would be subject to review only by the Justice Department once the basic settlement plan was approved by Greene.

Greene said public interest necessitates court review of the implementation and arguments to the contrary show a "complete misunderstanding" of the law governing settlement of antitrust cases. The judge also commented that "this particular settlement...[is] of extraordinary magnitude and complexity."

"It will not only provide for the reorganization of the largest corporation in the world," he added, "but it will also affect the entire telecommunications industry, the computer industry, the dissemination and publication of information, foreign trade, national defense and, thus, the interests of literally millions of individuals."

Therefore, he said, the settlement will not be approved unless AT&T and the Justice Department confirm the court's authority to oversee the

Bell reorganization and on its own initiative institute enforcement proceedings. Greene described in detail what procedures will be used to implement the settlement and allow outside participation in its implementation.

Greene gave AT&T and Justice until Aug. 26 to agree to his proposals. Otherwise, he said, the court will set a date for continuation of the trial in the antitrust suit.

Corrections

Atlantic Research Corp.'s Interview 4500 [CW, Aug. 9] costs \$14,500, not \$45,000.

The announcement of BGS Systems, Inc.'s Crystal/IMS and Crystal/CICS Modeling Support Libraries [CW, Aug. 2] erroneously indicated that its \$17,600 fee was for an annual license. Actually, it is for a perpetual license, the vendor noted from One University Office Park, Waltham, Mass.

02254.

More information about Insurance Servicing & Information Systems Corp. ("New Companies," CW, Aug. 2) is available from George A. Mann, Suite 301, 451 Hungerford Drive, Rockville, Md. 20850.

Gerald C. Galush was promoted to vice-president of operations at CPT Corp., not vice-president of finance [CW, July 19].

This Week

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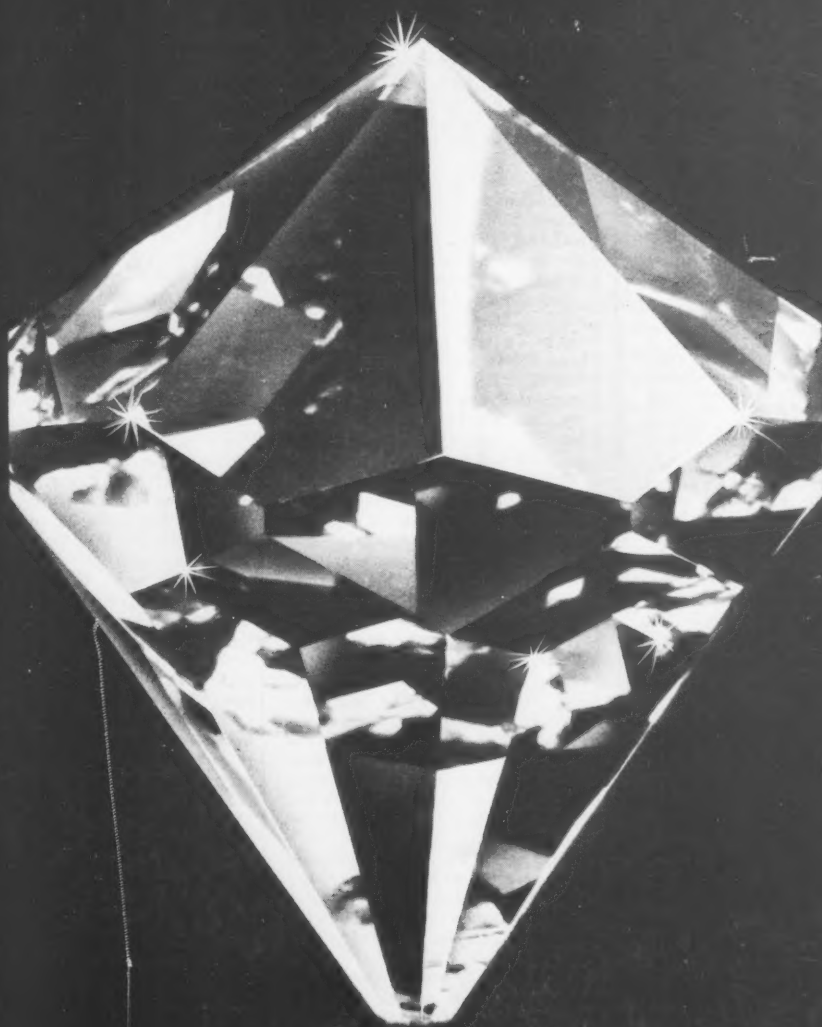
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Brandon Systems Slaps ASI With \$2 Million Libel Suit

By Marguerite Zientara
CW Staff

BETHESDA, Md. — Brandon Systems Institute, Inc. has filed a \$2 million lawsuit against multimedia DP trainer Advanced Systems, Inc. (ASI) of Arlington Heights, Ill., charging libel and slander.

The suit arose from the results of Brandon's latest *DP Training Survey*, in which DP managers and trainers indicate their "activities, plans and preferences," according to Brandon President Ben Knowles. Brandon, which offers in-person training programs, has published the survey annually since 1976.

In the 1981 version, ASI ranked low in the vendor-preference section of the questionnaire while Deltak, Inc., of Oak Brook, Ill., ranked first [CW, Feb. 8]. "In anticipation of client reactions, ASI... directed their sales representatives to discuss the 'facts' with prospective clients," Brandon's Knowles said. "ASI representatives told many DP trainers that the survey was severely biased and that the results were invalid."

Brandon's court complaint included an internal ASI field sales bulletin stating that the names of the persons surveyed came from a list "comprised of Brandon- and Deltak-supplied names only."

Those statements are "inaccurate, false and misleading," according to the suit. "In fact, none of the names were supplied by Deltak."

Deltak's vice-president of development and operations, Serge Beauregard, confirmed that last week. "Brandon didn't get anywhere near our mailing list; in fact, we never let anyone have it," Beauregard said.

According to Knowles, the accounts surveyed by Brandon included respondents to the firm's 1980 survey, Standard & Poor's listing of firms likely to have DP trainers and coordinators and 700 DP managers selected from a number of mailing lists. Of 1,350 questionnaires mailed out in October 1981, 290 were returned.

A spokesman for ASI's legal department called the suit "completely unfounded."

Brandon is seeking \$1 million in compensatory damages and \$1 million in punitive damages.

MCI Closes Virginia Center, Lays Off 18% of DP Staff

By Marcia Blumenthal
CW Staff

WASHINGTON, D.C. — MCI Communications Corp. has closed its Rosslyn, Va., data center and laid off 18% of its internal DP staff.

The move was not made because of any economic difficulties the company is experiencing, maintained company spokesman Gary Tobin, who said that 30 of the company's 170-person DP staff were let go. The layoffs were generally confined to computer operators and other operations personnel such as data entry clerks.

The philosophy of this company is to "always use computers instead of people," Tobin explained. "If the company could find a computer to be a company spokesman, I wouldn't be here either."

Although the MCI spokesman cited strategic business reasons for the recent layoffs, employees at the Rockville, Md., center are demoralized, according to a source who asked not

to be named.

The source, who was not laid off, claimed the layoffs were made because of "budget problems." He further alleged that the firm was bringing in \$30 million to \$50 million worth of new hardware and had to economize by slashing the DP personnel budget.

Tobin denied that charge, noting that the firm spends \$1.5 million a day on capital expenditures and the figure described by the source was reasonable, but not the reason for the layoffs.

MCI is doubling its size each year and has practically no turnover, so employees who are let go find it difficult to understand why the corporation cannot find another slot for them, Tobin said. He said the company is trying to relocate employees and has been contacted by at least three companies interested in interviewing some of the people who were laid off.

Tobin described the Rosslyn data center as a "redundant facility" that was scheduled for closing in November since it was to be integrated with the data center in Rockville. The firm closed the center now because IBM was able to deliver the hardware needed to augment the Rockville operation earlier than expected, he said.

Until now, American Management Systems, a subsidiary of Martin Marietta Data Systems, had leased the equipment located at the Rosslyn center to MCI for \$200,000/mo.

Workstation Aids Designer

(Continued from Page 1)

of documents and reports, the spokesman said. Symbols, connecting lines and text reportedly can be positioned anywhere on the screen, and symbols and text can be edited

identically to prepare and maintain the system and to design documents, he noted.

Documentation can be printed directly on a workstation printer as it appears on the screen while input or editing continues on other documents, according to the vendor. The MTC2000 is said to include system and file security features to restrict access.

Among the work documents the system can produce and maintain are project plans; Pert, Hipo and structure charts; data flow diagrams; report and screen layouts; and system or program narratives.

Tom Wilmott, an analyst with International Data Corp.'s Strategies for Office Systems Group in Framingham, Mass., said that the MTC2000 basically offers in a high-end, microprocessor-based desktop unit the capabilities that help alleviate the traditional logjam within systems analyst groups.

The combination of graphics and text processing will represent a productivity step forward for programmer/analysts who formerly may have resorted to designing drafting packages in-house to meet their needs, he said.

Purchase price for the MTC2000, including software, documentation, a single workstation, a dot-matrix printer and 10.5M bytes of disk storage, start at \$37,700. Additional workstations, each of which is a computing unit, cost \$22,300. The workstations can be clustered with up to 16 workstations and their associated disk storage and printers in a maximally configured cluster, the vendor said.

MTC also is offering an operating lease program with two-, three- and four-year terms. Lease prices for a complete stand-alone system will begin at \$1,188/mo, with additional workstations at \$702/mo.

System availability is 30 to 45 days after receipt of order, the MTC spokesman said from 24681 Northwestern Highway, Southfield, Mich. 48075.

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We want you to contribute to this Special Report. Your article can address any key networking issue:

- Reliability, integrity and security — how can they be obtained and maintained?
- What's new with packet-switching networks? What are their advantages and disadvantages? Who can afford them?
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• How do local-area networks fit into users' needs, and when is a private branch exchange more appropriate than a network based on coaxial cable?

We would also like to see articles on network planning and management, standards development, protocol conversion and data communications in the office.

Your stories should be between five and seven pages, double-spaced and typed. Send them by Aug. 30 to Bruce Hoard or Jim Bartimo, *Computerworld*, P.O. Box 880, 375 Cochituate Road, Framingham, Mass. 01701.

Soon Available Nationwide System That Tracked Killer Tied Diverse Data

By Bruce Hoard
CW Staff

ATLANTA — Twenty-eight black children died during a reign of terror that extended over 22 months in this city and ended with the arrest of Wayne Williams a year ago last June. The computer system that helped track down and convict Williams, now serving time for the murder of two of those children, will soon be available to law enforcement agencies across the country.

Atlanta data processing director Samit Roy presided over the hasty development and operation of the system, which he called "unique" during a recent interview. Based on two IBM 3031s and a series of powerful and sophisticated data bases, the system used a key word methodology to link disparate shreds of data into lengthy, cogent reports. "In 10 minutes, we were able to compile a 40-page case history," Roy said.

With 10 separate agencies participating in the manhunt for Atlanta's child killer, it was necessary to assimilate data as quickly and coherently as possible. To that end, the system employed several IBM Storage and Information Retrieval System (Stairs) data bases to help develop patterns in conjunction with the data entered into them.

Williams was first spotted on a bridge near the site of where several children disappeared. After data on Williams was entered into a Stairs data base, the data on him mounted to the point where he became a prime suspect.

Best Sources

The two best sources of information for the system were tips called in by concerned citizens and case files developed by investigators, the DP director said. If a tip indicated a suspicious blue van was seen somewhere, the words "blue" or "van" could be entered and all data referring to blue vans could be recalled instantly.

The case file data base used a split screen format to aid investigators. On one side of the screen, preformatted information about any of the victims could be displayed; on the other side, investigators' reports could be shown, making it easy to match scraps of data with recorded facts.

Roy said he could enter, in English, a page of data describing how a victim earned money and the system would show all documents with the word "money" in them. As an example, he said one victim had sold deodorant and when the word "sold" or "selling" was entered, the system recalled all information on any victim that had sold anything.

Another data base, referred to as the "Merge System," cut through the red tape of accessing data from the state computer system by instantly recalling any vehicle registration data after being prompted by a name only.

Roy illustrated the power of the system by relating an incident in which a tipster reported a suspicious-looking green Ford Fairlane at a shopping mall where three victims had last been seen. After entering "green Ford Fairlane" into the data

base containing tips, investigators got six "hits" or references to a similar vehicle. All information on this vehicle was plugged into the Merge System and the owner's name, driver's license and information on other cars he owned appeared.

That information was entered into the "incident inquiry" system, which records every time that a police cruiser is dispatched. That data base revealed that a cruiser had been dispatched in connection with a suspect other than Williams eight months earlier, when a resident had complained that the suspect was a child molester.

Turning to a criminal history data

base, investigators found the suspect had a history of arrests relating to homosexuality and child molestation. An arrest tracking system showed he had been recently arrested on child molestation charges.

A physical description of the suspect was then entered into one of the other data bases, and information describing what he did for a living and how he behaved was displayed. That data was then plugged into the system along with such action verbs as "known" and "seen" to determine whether anyone had known or seen him previously. As it turned out, the suspect was wanted for another crime and subsequently arrested.

"In about 10 minutes after one tip on a green Ford Fairlane, we were able to come down to an individual," Roy observed.

In a similar fashion, the system worked against Williams both prior to his arrest and during his trial, Roy explained. Testimony given by the defense was instantly checked online against prior statements and then used during cross-examination.

The system has now been enhanced and implemented as an ongoing investigation tool by the Atlanta Police Department. Numerous other cities have expressed interest in it and Roy said it will be ready for use by them in about three or four months.

DEVELOPING TODAY'S SYSTEMS ASKS A LOT FROM TODAY'S USER.

For years, systems requirements were defined for users by analysts who were computer professionals. Although this seemed to work, many an unfamiliar system was imposed on an unwilling user. The resulting disasters led many organizations to create project teams where analysts got together with the users to define the requirements of the system. This worked so well that requirements definition today is a skill that is expected of every user.

Today's user is expected to (1.) Review the requirements definitions produced by an analysis team (2.) Participate effectively as a member of an analysis team and ultimately (3.) Lead an analysis team. In effect, the user has become an analyst.

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RIM Out for Commercial IBM, Univac Users

By Susan Blakeney
CW Staff

SEATTLE — The formerly free Fortran relational data base management system (DBMS) developed by Boeing Computer Services Co. (BCS) has been enhanced with IBM and Sperry Univac compatibility and released for commercial sites.

Originally developed for the National Aeronautics and Space Administration (Nasa) [CW, June 15, 1981], the Relational Information Management (RIM) tool now handles both administrative and engineering/scientific applications, according to a BCS spokesman.

The general-purpose DBMS reportedly allows users to enter data in a variety of formats and then manipulate it in several different ways. Although RIM was created in 1979 under Nasa's Integrated Programs for Aerospace-Vehicle Design (Ipad) Project Office, BCS did not publicize it strongly because it was considered "public domain software" — software developed with government funding and free to the public for the asking.

After the 1981 *Computerworld* article about RIM, more than 200 companies and universities requested the RIM prototype from BCS and were charged only a \$405 distribution fee. Don Taylor, BCS' Ipad program support manager, attributed the huge response to a lack of scientific/engineering DBMS products on the market. There is little activity in this

area because "universities haven't had enough money ... and in the commercial market, companies are more interested in addressing the needs of a very large customer base that includes more business systems than engineering activities," Taylor said.

The Ipad RIM is still available gratis, but the commercial RIM — which features plotting, editing and tallying capabilities not present in its predecessor — carries an \$8,800 license fee.

Instead of storing data in hierarchical or network relationships, RIM stores it in two-dimensional tables. As new applications arise, new data attributes can be added or removed so the DBMS can grow to keep up with emerging needs, the BCS spokesman said.

Current RIM applications include management of structured analysis and design data, file directory management, project and problem track-

ing, data management, subcontractor business reporting and tracking.

RIM's command language includes a full set of commands offering the user direct on-line or batch access to information retained in the data base, according to the vendor. An application program interface allows programs written in Fortran 66, Fortran 77, Pascal and Cobol to access and modify an RIM data base through Fortran-callable subroutines.

Six Data Types

The RIM system supports six primary data types: text, integer, real, double precision, matrix and vector. All data types may be of fixed or variable length, the vendor said.

RIM is available as a stand-alone system or through an application program interface. As a stand-alone, RIM may be executed in menu or command mode. The menu mode prompts the user for input to create,

load and update the data base, the vendor said.

Available on-line via BCS' Mainstream-EKS service, RIM is offered in both interactive and batch processing modes, and charges are based on a transaction basis.

RIM currently runs on computers including Control Data Corp.'s Cyber machines under NOS and NOS/VE; Digital Equipment Corp. VAX-11 superminis under VMS 2.1; IBM systems under VM/CMS; Prime Computer, Inc.'s Models 400 and 750 under the Primos 18 operating system; and on Sperry Univac 1100 mainframes running under Exec 8.

RIM is also being sold through commercial vendors including Cosmic Corp. of Atlanta. These versions are said to come complete with support and maintenance and provide for future enhancements, unlike the Ipad version.

BCS can be reached through P.O. Box 24346, Seattle, Wash. 98124.

Researchers in Optoelectronics Think Technology Could Yield Superfast Chip

By Tom Henkel
CW Staff

CHAMPAIGN, Ill. — A chip about 10 times faster than those based on conventional silicon technology, which gives off virtually no heat and offers potentially higher packing

densities over current circuits, may be possible with an optoelectronic technology being developed by researchers at the University of Illinois here.

Actual development of an optoelectronic chip may be 20 years away, but the researchers feel the technology could revolutionize the way processors are built. The technology could lead to the development of a processor driven by photons (the basic element of light) instead of the electric impulses used in silicon technology, according to James J. Coleman, a professor of electrical engineering who is working with three other scientists on the research project.

Coleman said heat and interference from closely packed circuits have posed a problem for developers of smaller and faster silicon-based devices. Since the optoelectronic chip can process both electric and optic forms of electromagnetic radiation, heat and interference can be drastically reduced, he explained.

BDPA Convention Slated for Detroit

DETROIT — Black Data Processing Associates (BDPA) will hold its fourth national convention here Sept. 17-19. The theme of this year's conference is "Entrepreneurship — A Successful Attitude."

The keynote speaker will be John Bustemante, chairman of First Bank National.

The conference will include several professional development workshops. A vendor display area will feature state-of-the-art hardware and software products.

Added this year is the company display area where representatives from various companies will make attendees aware of opportunities available in their organizations.

The registration fee for members is \$62 for members and \$75 for others. The BDPA can be reached at P.O. Box 7466, Philadelphia, Pa.

The heart of optoelectronic technology is a fabrication process called metalorganic chemical vapor deposition. The process is used to create superlattices, or scrambled layers of gallium arsenide and aluminum arsenide. The layers can be mixed in very complex patterns to direct the passage of light through the chip, according to Prof. Nick Holonyak Jr., leader of the research project.

Just as silicon slices are etched with patterns to direct the flow of electricity, superlattices can be constructed to direct light through the chip. "We can put together any pattern we want," Holonyak said, adding that electrical energy can also be directed through the chip.

The University of Illinois researchers are encountering several problems in their work, according to Coleman. For example, gallium arsenide is more difficult, and hence dramatically more expensive to produce than silicon. That constraint has caused some researchers and chip vendors to doubt the viability of gallium arsenide as a challenger to the silicon marketplace.

However, Coleman contended that gallium arsenide is in its infancy, and improved production techniques will make it less expensive.

"Silicon is going to be with us forever, but the optoelectronic chip is going to come in to do certain jobs the silicon chip is not capable of handling," Holonyak added. "Eventually, these optoelectronic chips will fill the same kind of role as the silicon chip. To some extent, [optoelectronic] will be complementary to [silicon]."

In addition to chips for processors, the optoelectronic technology can be used in other devices such as lasers and light-emitting devices. Those applications will probably be developed before the optoelectronic processors, said Holonyak, whose research is being funded by grants from the National Science Foundation and the U.S. Army research office.

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Gould Lab Head Nabbed in Theft Of Cash, Gear

By Jim Bartimo
CW Staff

ST. LOUIS, Mo. — The head of Gould, Inc.'s development laboratory at its divisional headquarters here was indicted by a grand jury last month on charges that he stole more than \$300,000 in cash and computer equipment.

Charles Knickerbocker, 44, an engineer who has worked at Gould for 10 years, was arrested after police received an anonymous tip that he had computers in his basement that had been ordered and paid for by Gould, according to Robert L. Weber, district staff supervisor of security for Southwestern Bell, which also owned some of the equipment. Knickerbocker's alleged theft is thought to be tied in with the activities of a theft ring involving at least two other people.

Knickerbocker had about \$3,000 worth of telephone equipment including some data communications tools, according to Weber. However, most of the equipment seized was Hewlett-Packard Co. hardware, including one large processor.

"He had more tape drives and disk drives than we do," Weber said. "What one person was doing with that much equipment is beyond me. You name it and he had it."

"Through phony invoices of one type or another, he is alleged to have gotten equipment at Gould's expense," Weber continued. "Probably 95% was computer stuff — terminals and the like."

Once he had used his position at Gould to obtain the equipment, Knickerbocker would either keep it or sell it, according to Assistant Special Prosecutor for St. Louis Gordon Ankney. "The vendors said they thought he was a legitimate buyer, but that's kind of hard to believe," he said.

A Gould spokesman would make no comment on the case while legal action is pending, and Knickerbocker could not be reached for comment.

Two Earlier Arrests

The investigation into the Knickerbocker case came about from publicity resulting from two earlier arrests within a two-month period, Weber said. The first arrest was of David Bates who, on an informant's tip, was caught with \$100,000 in phone equipment.

That arrest led to the apprehension of Roger Ebinger, an employee of Western Electric, who was caught with \$20,000 worth of telephone equipment, counterfeit money and arms. Ebinger and Knickerbocker were good friends, Weber said.

"Ebinger was printing [counterfeit] money and had enough military equipment to blow up a city," Weber said. "He used to be a lieutenant colonel in the Army Reserve."

A clear connection among all three who have been arrested is not yet definite, Weber explained. "We can't find a paper link between Bates and Ebinger or between Ebinger and Knickerbocker and they're not talking. We have no idea of who else is involved."

Ad Agency Disbands Syndication Unit After Scam

By Jim Bartimo
CW Staff

NEW YORK — In the wake of a data processing scam that left it with a bogus \$30.5 million in revenues on its books, the J. Walter Thompson Co. is discontinuing its syndication unit here and has fired that unit's head.

The decision to discontinue the unit in which the scam took place was termed "strictly an operational decision" by Don Deaton, vice-president of communications for the ad agency's JWT Group parent company. "It was a rotten business. We just weren't getting a return, so we decided to terminate it."

Until last March, the second largest ad agency in the country believed that it was receiving a large return

from the syndication unit [CW, March 8]. The unit was in the business of acquiring syndicated television programs such as *M*A*S*H* and *All In the Family*, then providing them to local stations in return for commercial time or cash.

In March, however, financial irregularities were uncovered. According to Deaton, someone had been using the company's computer to simulate \$30.5 million in syndication sales and trade that resulted in a number of large commissions. The perpetrator was not found despite a lengthy investigation by the company, but the head of the unit, Maria Luisi, was fired after a suspension without pay.

"She was terminated and we've not heard from her since," Deaton said. "We've completed the financial in-

vestigation. Nothing more is really going on here."

JWT will level no charges against Luisi. "The indictment will have to come from someone in the government," Deaton said.

Luisi has spoken about the case only through her lawyer, Ivan Fisher, but Fisher declined to comment on Luisi's firing or the unit's discontinuation. Once critical of the way the unit was run, he said, "They [J. Walter Thompson] went out of their way not to mention Maria in their press release, so I'm going to go out of my way not to mention them."

When the scandal first came to light, the agency's stock plummeted from 20½ to 16½. But there have been no long-term effects, Deaton said.

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Contributors Get Tax Deduction Clearinghouse Offers Free Computers to Needy

By Tom Henkel
CW Staff

NORTHFIELD, Ill. — You may not be able to find one at a garage sale or the local Salvation Army Thrift Store, but if you're looking for a good, free computer, an organization here might be able to help.

Many businesses and industries have realized they can turn outdated machinery and equipment into a handsome tax deduction by donating them to another more needy organization. The National Association for the Exchange of Industrial Resources (Naeir) is a clearinghouse for such donations.

The nonprofit organization keeps track of everything from scientific equipment to used toilets, and computer systems and peripherals are more than welcome. In fact, Norbert C. Smith, president of the association, said the most valuable single item ever donated was a \$500,000 analog AD-2-32 PB processor manufactured by Applied Dynamics International, Inc. The processor was donated by the University of Chicago to the Illinois Institute of Technology.

How does the organization keep track of nearly eight million annual donations? The answer is obvious — by computer. Naeir uses a Vector Graphics, Inc. 3000 series processor that catalogs available items and matches up donations with recipi-

ents. To use the system, member organizations are asked to submit a list of wanted items. That list is then stored in the processor and when a desired item is donated, the processor generates a list of organizations who want it, Smith said.

In cases where there is more than one organization looking for the same item, Naeir makes the final decision on who the lucky recipient should be. Smith said that decision is a manual process that takes into consideration the geographic location of the donor and recipient and the amount of goods already received by the recipient, Smith said.

Many major U.S. colleges and universities, charities and other institutions are members of the organization. Any nonprofit, tax-exempt organization may belong but must pay a \$250 annual fee.

In addition to the computer-checked inventory list, Naeir publishes a periodic list of available items. This list, Smith said, gives member organizations the opportunity to pick up items they may need but did not mention on the "wish list" questionnaire. Off-the-wall items such as stadium bleachers fit into this category, Smith said.

Members must agree to pay shipping costs of donated items, which are stored in Naeir's South Chicago warehouse. The organization promises to refund the membership fee if

the member does not get back at least twice the value of the fee in donated goods. Smith said most organizations average about \$2,000 to \$3,000 worth of donations a year. Some lucky organizations receive much more.

Naeir gets about six computer systems each year. Smith said the processors usually are a high-demand item unless "the system is very big and very old, then it's not easy to give away."

Minis and microcomputers are the most sought-after items, but Smith said they are rare. Naeir has approached several small-systems firms asking for off-the-shelf donations (donations from inventory can be deducted using the full list price of that

item), but so far the organization has yet to receive a new micro or mini-computer.

Donors from the private sector usually have replaced old equipment with more technologically advanced hardware. The amount that can be deducted because of donating those items varies depending on what form of depreciation the firm is using.

In some cases, Smith admitted, the tax advantage is not significant enough to entice companies to donate the equipment.

More information on donations and membership is available from Naeir, 550 Frontage Road, Northfield, Ill. 60093.

DPer Climbs the Ladder

(Continued from Page 1)

Europe.

However, Karolchik doesn't regret a minute of the time she spent moving up the traditional DP career ladder at Texaco. "The training I got there was solid, and I think it's something that is lacking today. It seems to be the thing to move in DP and have more jobs on your resume, but I felt exactly the opposite," she said during a recent interview here.

Karolchik credits lessons she learned from her own managers in developing her own skills as a manager. A particularly valuable lesson came from a manager who was not in the information processing discipline. In preparing for a presentation to the company's top brass, he told her, "Pat, I want you to put your business hat on and take your computer hat off." This advice has proved valuable in learning to communicate with management.

A mathematics and physics graduate of Molloy College for Women on Long Island, N.Y., Karolchik's first job was doing engineering analysis for a small aerospace company, where she became interested in programming. That firm did not provide DP training; when Karolchik heard the oil companies did, she made the move to Texaco.

Karolchik had plenty of time at Texaco to see projects from beginning to end, an experience she recommends to people entering the profession today. Texaco was a beta test site for IBM's IMS — a time that she recalls as very exciting.

Karolchik admits she was not a bits and bytes type, but was more interested in the bigger picture, whether it was total system design or interfacing with user departments — a role she particularly enjoyed.

By the time she decided to leave Texaco, Karolchik was managing 30-person projects and traveling all over the world. But the oil giant did not have enough openings in management because, she said, there was little turnover at the firm. Besides, Texaco had moved Karolchik's operation to Westchester County, and she preferred the big-city atmosphere of New York.

Fortunately, Karolchik's DP expertise was known outside the company and she was "headhunted" for the

position she eventually accepted with American Express. Her first assignment as a staff position was as director of technical planning, developing guidelines for information processing for the company, which required working with every operating unit of the company.

"The transition from Texaco to American Express was like going to graduate school," Karolchik recalled. "I had a chance to learn about the company before I had to go into a line management position."

Organizationally, management information systems are "fundamental to the bottom line of American Express. There is rarely a major marketing program that can be delivered without system support," she said. This situation creates a myriad of management opportunities for people with DP backgrounds.

Bird's Eye View

In this staff role, Karolchik was able to obtain a bird's eye view of how American Express operates and to meet key information processing executives in almost all of the company's divisions. This early networking experience eventually resulted in her first line management job, vice-president of systems and data base administration in the company's Card Division, which she took about a year after joining the firm.

The position offered, among other things, her first chance to develop budgetary and administrative skills. But when the unit for which she was working became slated for a move to Salt Lake City, Karolchik made it known to management that she wanted international experience. A short time later, she was later offered her current position as vice-president of international systems and data processing.

Although her current job is a staff position, Karolchik sees it as an ideal opportunity to learn more about the business and to concentrate on developing strategic planning skills.

Now on her way to a new vice-presidential line position in the UK, Karolchik believes line management offers better credibility for advancing within the management ranks of the company. Eventually, she would like a position at the executive vice-presidential level.

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—Technology Week
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BBN Information Management Corp.	Infomail	Software for IBM, DEC and BBN (C) Computer	Password	Yes	Computer or WP	No	Yes	Any Terminal	Optional	Yes
Dialcom, Inc.	Dialcom Global Mail Network	Public Subscription With Commercial Data Bases Available	Encryption/Password	Yes	WP Based	No	Yes	Any Ascii Asynchronous	TWX Telex Ecom³ X.25	Yes
GTE Telenet Communications Corp.	Telemail	Public Subscription and Software Package for Tandem Computers, Inc.	Password	No	Limited WP	No	Yes	Any Ascii Asynchronous	TWX Telex	Yes
Digital Equipment Corp.	Decmail All-in-One	Software for VAX/VMS Systems	Password	Yes	WP Based	No	Yes	All DEC Terminals	TWX and Telex Optional	Optional
Tymnet, Inc.	Ontyme	Public Subscription Service	Password	Yes	Line Based	No	No	Any Ascii Asynchronous	No	Yes
Data General Corp.	CEO Information Management	Software for DG Computers	Password	Yes	WP	No	No	All DG Dasher	TWX, Telex Optional	Messages Stored By Group
Prime Computer, Inc.	Office Automation System	Software For Prime Computers	Password	Yes	Limited WP for Messages to 99 Lines — Full WP For Document Distribution	99 Lines for Short Messages No Limit For Document Distribution	No	All Prime Options For Others	No	Yes
IBM	DOSF/8100 Disos Profs 5520 Displaywriter	Software for IBM Computers	Password	Yes	Yes Except 5520 to Displaywriter	No	Yes	All IBM	With Displaywriter	Yes

¹Pointer-Based Message for Multiple Recipients Stored Only Once on System

²BSC — Binary Synchronous Communications

³Ecom: Electronic Computer-Oriented Mail

CW Chart

Cost-Justifying a CBMS Could Prove a Sticky Job

By Bruce Hoard

CW Staff

"Sure, computer-based message systems are great toys," the hard-nosed executive snorted. "But I'm looking at the bottom line. Where are the hard dollar savings?"

That question has plagued many a would-be computer-based messaging service (CBMS) user. How, in these times of tight money, can a tight-fisted manager be made to understand and embrace the sometimes amorphous gains to be gotten from CBMS?

Dave Terrie, senior analyst for office automation with International Data Corp. in Framingham, Mass., said there is "a certain amount of validity" in the argument that time saved translates into money earned. He pointed out, however, that "nobody is going to use that time saved in a completely effective manner."

Cost-Justifying CBMS

The theory that time saved means money earned may do less to cost-justify a CBMS than the theory asserting that the true value of a system lies in the "soft" benefits of enhanced communications and a subsequently better informed populace, according to Terrie.

CBMS is not alone in its cost-justification plight, he added. Because of

their relative youth, all office systems are subject to critical scrutiny by suspicious management, and "everybody is trying to find a way to say to

Product Spotlight

their management, 'Listen, I know this will pay us back in two-and-a-half or three years.'"

Many things that may have merit may not be cost-justifiable, Terrie said, listing integrated DP and word processing, enhanced graphics capabilities and good editing on text processors. He knew of no study claiming hard dollar savings for office systems that could not be refuted successfully. "Anybody that comes up with a hard number for cost-justifying a system is kidding you because there is no hard number."

However, that situation may improve as more experience is amassed and more hard dollar-saving case histories are compiled, he said.

Soft dollar savings are even less acceptable to management in times like these when the economy is ailing, Terrie noted. The current management attitude is no commitment to

(Continued on Page 12)

About the Charts

Because of space constraints, these charts cannot represent precisely every capability and option of the products listed. Instead, an attempt has been made to depict, in the most easily understandable terms, the primary properties of computer-based messaging systems (CBMS). Further information is available directly from the vendors:

- BBN Information Management Corp.'s Infomail is offered as a software product for IBM mainframes under VM/CMS and MVS, Digital Equipment Corp. VAX-11 superminis and BBN's own C machine.

BBN Information Management Corp., 10 Moulton St., Cambridge, Mass. 02238.

- Computer Corp. of America's Comet is available either on a subscription basis or as software for all DEC PDP-11s and IBM 360, 370, 4300 and 30 series computers.

Computer Corp. of America, 675 Massachusetts Ave., Cambridge, Mass. 02139.

- Data General Corp.'s CBMS module for its CEO Information Management runs on Eclipse computers under AOS, AOS/VS and VS.

Data General Corp., 4400 Computer Drive, Westboro, Mass. 01581.

- Dialcom, Inc.'s Global Mail Network is an international computer service company that specializes in management support systems in addition to CBMS.

Dialcom, Inc., Suite 410, 1109 Spring St., Silver Spring, Md. 20910.

- Digital Equipment Corp.'s Decmail is a straight CBMS package for VAX/VMS systems. All-in-One is a complete office automation package that also runs under VAX/VMS.

Digital Equipment Corp., Maynard, Mass. 01754.

- GTE Telenet Communications Corp.'s Telemail is available as a subscription service or as a software package for Tandem Computers, Inc. Non-Stop computers.

GTE Telenet Communications Corp., 8229 Boone Blvd., Vienna, Va. 22180.

- IBM's 5520 Administrative System is an integrated office system that supports up to 18 CRT terminals, 12 text-quality printers, 16 communications lines and about 30,000 pages of documentation. The Displaywriter is a diskette-based word processing system.

The Distributed Office Support Facility/8100 (DOSF/8100) is a distributed, shared-logic, display-based system comprising a standard IBM 8100 minicomputer and software designated DOSF, which provides text functions and usability. Also included with DOSF/8100 is one or more 3732 CRT terminals and one or more correspondence-quality printers.

The Distributed Office Support System (Disos) is a twin software package that permits creation and maintenance of large, host-based, sharable document files and interaction between two or more DOSF/8100 systems.

The Professional Office System (Profs) includes the capabilities to send and receive documents, file them and create calendars, reminders and tickler files. It operates on one or more 4300 processors as well as other IBM processors running under the VS operating system.

- Prime Computer, Inc.'s Office Automation System runs on all Prime computers.

Prime Computer, Inc., Prime Park, Natick, Mass. 01760.

- Tymnet, Inc.'s Ontyme is available on the Tymnet public data network or as a private package running on the Tymnet Engine computer.

Tymnet, Inc., 2710 Orchard Pkwy., San Jose, Calif. 95134.

CBMS SOFTWARE PACKAGES

Company Name	Acknowledges Message Receipt?	Requires Extra Software?	Pricing	Ability to Append Messages?	Text Retrieval Methodology	Urgent Send Feature	Delivery Priorities	Maximum Number of Simultaneous Users	Help Facility
Computer Corp. of America	Optional	No	Subscription — \$60/Mo With Option to Migrate to DEC Or IBM Software Package DEC Software \$40,000 IBM Software \$60,000	Yes	Key Word	No	No	IBM — 999 DEC — 64 Subscription 100	Yes
BBN Information Management Corp.	If Message sent "Registered"	No	\$20,000-\$80,000	Yes	Key Word and Full Search	Optional	Yes	Depends on Configuration	Yes
Dialcom, Inc.	Yes	No	\$5 to \$9/Hour Depending On Time of Day Plus Telecommunications Access Costs (Tymnet, Telenet and so on)	Yes	Key Word	Yes	Yes	1,900	Yes
GTE Telenet Communications Corp.	If Message Sent "Registered"	No	\$14/Hour depending on Time of Day .5 Cents per 1,000 Characters After Five Days. Minimum Monthly Charge of \$500 After First Three Months \$140 Monthly Account Charge \$95,000 for Tandem Computers, Inc. Software	Yes	Key Word	Yes	Yes	3,000	Yes
Digital Equipment Corp.	Optional	Yes	\$20,000 — Decmail \$29,000 — All-in-One Software	Yes	Key Word	No	Yes	30	Yes
Tymnet, Inc.	Yes	No	4 Cents per 1,000 Characters \$3 to \$6/Hour \$200/Mo Subscription Fee \$500/Mo Minimum Usage 15 Cents per Message	Yes	Accesses Files By Category	Optional	Yes	50	No
Data General Corp.	If Message Sent "Certified"	Yes	AOS — \$10,000 AOS/VS — \$15,000 VS — \$25,750 (Complete CEO Package)	Yes	Key Word	Yes	No	128	Yes
Prime Computer, Inc.	For Document Distribution	Yes	\$30,000	Yes	Key Word	No	Yes	120	Yes
IBM	All but Displaywriter To 5520	Yes	Profs — \$402/Mo Displaywriter \$7,000 — \$15,000 5520 \$150,000 or \$3,000/Mo Disoss \$900/Mo/Host \$75 for Each Distributed Processor	All but 5520 and Displaywriter	Key Word	5520	5520	Depends on Configuration	Yes

CW Chart

CBMS Offer Way to Stop Phone Interruptions

(Continued from Page 1)

In contrast, CBMS are "person-oriented," which means people can access messages in their electronic "mailboxes" via telephone lines from any place in the world. "If I want to send you a message on a CBMS, I don't have to know where you are," Callahan explained. "I don't have to know you're in Denver. If you check your mailbox from Denver, you'll get it."

The process itself is simple. The message sender composes a message on his terminal, be it in the office or remotely, addresses it to the recipient and deposits it in the computer system's memory — or "mailbox." He then logs off or goes on to another task.

To retrieve the message, the recipient accesses the computer from his in-house terminal or calls in on dial-up lines if he has a remote terminal. If he has mail, it is transmitted to him on-line.

Two CBMS Sources

There are two main sources for CBMS: subscription services offered on a time-shared basis and software packages sold by computer vendors

with their machines.

A subscription-service CBMS is basically a time-sharing service that transmits and stores messages from a host mainframe at the service provider's location. Because more than one company subscribes to the service, messages can be sent to mailboxes belonging to other companies.

The first subscription service CBMS, Comet, was developed by Computer Corp. of America (CCA) in conjunction with Digital Equipment Corp. and it became commercially available in 1978. Callahan described Comet, owned and sold by CCA, as very friendly and designed for use by non-computer users.

Subscription services allow first-time users to try out a CBMS at a fairly low cost, giving them the opportunity to decide if it is an appropriate tool for the company, he said. Subscription services are particularly attractive to small companies who do not have or could not justify purchasing their own hardware for the application.

Product Spotlight

Convenient intercompany communications is another hallmark of the subscription services, Callahan said, adding that it would be "a real pain" to get a mailbox on another company's in-house computer.

CBMS Software Packages

The second major CBMS source, office automation software packages offered by such vendors as Prime Computer, Inc. and Data General Corp., enjoy an advantage over the subscription services because they are more easily integrated into the user's overall system, Callahan said. "Let's say there was a [Visicorp] Visicalc-like package and I was doing a spreadsheet," he explained. "I could take the spreadsheet and include it in a message to somebody else and say, 'Here are the results of these calculations.'"

Callahan suggested that a company wishing to use CBMS first consider whether it already has terminals or would need to buy them. Secondly, executives and managers should be

polled to determine whether they would utilize the system. The package itself should be accessible from outside the company so users can access it while traveling.

Callahan was less than complimentary about the text editors found in subscription systems, calling most of them "terrible. That has been their weakest point to date. There have been some real problems with editing at 300 baud over a dial-up line."

Those editors can steal a lot of CPU cycle time, according to Callahan. To get around that, some subscribers prepare their messages on a word processor and then transmit them over the service in an Ascii terminal mode.

About 50 subscription and vendor firms are selling CBMS packages, Callahan said.

Along those lines, the Cambridge, Mass.-based Yankee Group estimates 80,000 terminals were used for CBMS by the end of 1981. In addition, there are between 180,000 and 225,000 electronic mailboxes in existence — 60,000 subscription-based mailboxes, with the rest based on vendor software packages, of which there are some 2,500.

Focus on Dual-Career Couples

Duo Preparing Book on Job-Related Relocation

By Lois Paul
CW Staff

HALF MOON BAY, Calif. — It's four o'clock on a Friday afternoon and you are called into the personnel office. Your company has an "excellent opportunity" for you at another branch 1,000 miles away. This will require relocation for you and your spouse, who has a well-established career in your present location. Personnel wants an answer on Monday morning.

If you've ever found yourself in that situation, you are not alone. Major U.S. corporations relocated 300,000 people in 1978; last year, that figure rose to 500,000, according to Sharon J. Richards and Iris Lorenz-Fife, who are preparing a self-help book on relocation.

Lorenz-Fife, a free-lance writer based in the San Francisco Bay area, and Richards, a relocation resource consultant with The Relocation Center in San Jose, plan to interview several hundred people, including a number of DP professionals, for the project. (For information on participating in the survey, see box at upper right.)

DP couples seem to have greater opportunities for mobility, particularly when they are moving toward management, Lorenz-Fife said. Often they initiate the moves, rather than waiting for their firm to transfer them, Richards added.

The California high-technology belt "is perhaps the one area where [relocation] already is a deep issue and where women are being relocated and their husbands are asked to follow them," Lorenz-Fife noted. "In the more traditional fields, that is not true yet."

Among the problems involved in relocation is the cost factor. According to *Forbes* magazine, it cost \$34,000 in 1981 to move a family of four approximately 1,000 miles. Richards

said the current figures are closer to \$40,000. One reason for this is the need to find new housing, which generally involves a quantum leap in mortgage rates.

Dual-Career Issues

Although housing costs are currently companies' major concern about relocation, the focus "eventually will shift to dual-career issues," a corporate executive told Richards. By 1990 it is anticipated that 80% of all families will be dual-career.

Lorenz-Fife said this statistic may already be accurate in the Silicon Valley, where the high cost of living makes it almost essential for both spouses to work.

A frequent problem for two-career families is deciding whose career comes first when one partner is asked to move. Both Lorenz-Fife and Richards said this is not as great a problem for some DP couples, because firms often are anxious to hire both of them. "In fact, Control Data Corp. has in its policy that they must actively encourage family members," Lorenz-Fife pointed out.

She recalled one couple that dealt creatively with the fact of two diverse careers. She is a DP professional. He is involved in buying fruit and vegetables from farms for canning. When they met, they thought the conflicts in terms of work locations would be insurmountable. His job required rural settings, whereas she would be working for firms in urban areas.

The woman established her own DP consulting firm so she could live near her husband's work and travel when necessary to her customers' locations. Each time she and her husband have relocated, she has opened a new branch of her business. Today she has clients in six different locations whom she services on a commute basis.

Want to Participate?

Have you and your spouse been through a relocation decision?

If the answer is yes, Iris Lorenz-Fife and Sharon J. Richards would like to hear from you. Send a brief letter explaining the details of your relocation experience to Iris Lorenz-Fife, 2317 Winged Foot Road, Half Moon Bay, Calif. 94019.

Lorenz-Fife and Richards will then send you a questionnaire and further information about their

research. There may be additional brief questionnaires if they decide to consider you as one of their interview candidates.

The writers are particularly interested in talking with couples nationwide, either over the telephone or during planned visits to various areas. They especially want to include people who have experienced international relocations.

Both researchers said the decision to "settle down" and raise children usually is part of an overall plan. Couples often choose an area like the Silicon Valley where there are enough companies nearby to provide future career moves without the necessity of relocation.

Planning Ahead Stressed

Both writers stressed the importance of planning for relocation before it becomes a reality. This is particularly true if the relocation of one might result in a "commute relationship" while the spouse completes obligations at his current location.

Lorenz-Fife recalled a couple whose move to Silicon Valley from Cleveland created a problem that they couldn't quite identify. They complained that they missed a small bakery where they would buy French bread on the way home from work. Actually, the problem was a change

in lifestyle.

In Cleveland, the stop at the bakery had been part of a daily time they would spend talking and unwinding while they prepared dinner together. "Out here I get home early and I've got dinner going and he comes in and it's almost ready. It's a whole different thing," the woman explained. "We have to realize that by changing our jobs, we have changed an aspect of our lifestyle and lost something we valued. We had to find some way to put it back."

According to Lorenz-Fife, "two recent studies indicated that 33% of the people who have refused transfers cited dual careers as a reason to refuse the move." One survey last year revealed that 50% of personnel managers said that relocations would not stop because of dual-career issues. Rather, the corporations would have to adapt to the fact that there would be two people to be moved.

Cost-Justifying CBMS Sticky

(Continued from Page 10)

new technology without prior proof it will provide hard dollar savings.

Tom Billadeau, president of The Office Systems Consulting Group, Inc. in Boston, takes a pragmatic stance

on cost-justifying CBMS. "People assume that there is a need to communicate, and based on that, people are given a communications tool," he says.

Rather than looking at cost-justification, the things to consider are the tangible benefits associated with CBMS, he claimed. Those include uninterrupted operation, the ability to tie an electronic document onto something else and the speed of moving information from one place to another.

At sites where CBMS have been implemented, they have spread "like wildfire," he declared. The way to evaluate the success of such implementations where CBMS has caught on is to determine what communications problems have been alleviated by its use, Billadeau said.

"If electronic mail accomplishes nothing else but moving information while it's still information, as opposed to being historical data, then it has perhaps cost-justified itself in its own right," he concluded.



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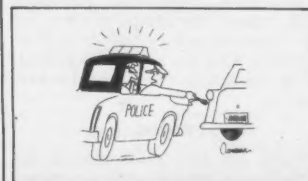
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West Point Data Marching To Tune of Local-Area Net

By Susan Blakeney
CW Staff

WEST POINT, N.Y. — Data will be marching to a different tune at West Point when a new local-area network is deployed this fall.

The \$16 million Instructional Support System for the U.S. Military Academy's students will be used for computer science and engineering classwork, enabling students to perform computer-aided design (CAD) work and communicate with each other. The cadets will have access to

function. For example, one channel might perform as a dedicated link between processors; another might act as a shared bus for packet switching.

The military academy's old base-band network was based on a Sperry Univac 1110/12 computer system. According to Fred Manhartberger, the Martin Marietta project manager at West Point, it "was saturated" and did not allow for expansion.

"With a broadband network construction, we can add up to 20,000 terminals onto the local-area network," Manhartberger said. The new system, he explained, is very high-speed, expandable and relatively inexpensive to expand.



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terminals in classrooms, laboratories, instructors' offices and barracks.

And, with military precision, everything was ready to go when the school doors swung open yesterday.

The total network will be implemented over an eight-year period and, when completed, support a minimum of 500 simultaneous users. The initial phase of the network, configured by Martin Marietta Data Systems, Inc. and now completed, includes four Prime Computer, Inc. Model 850 superminis and 150 terminals from various hardware vendors including Terak Corp. and Tektronix, Inc. The software for the system was developed by Martin Marietta and some 22 subcontractors.

The local-area network itself, Sytek Corp.'s Localnet 20, operates by stacking data, voice or video channels in the coaxial cable bandwidth, segmenting that bandwidth with frequency-division multiplexing techniques to produce independent logical channels, each with a distinct

Directory Details On-Line Data Bases

NEW YORK — The *Directory of On-line Databases* was announced here by Zoetrope, Inc.

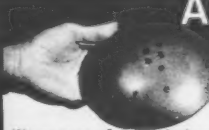
The booklet lists information on over 1,200 data bases currently available via computer terminal, personal computer or videotext receiver. The directory was compiled and edited by Ruth N. Cuadra, David M. Abels and Judith Wanger for Cuadra Associates.

The 222-page *Directory of Online Databases* is available for \$29.95. Zoetrope is at Suite 516, 80 E. 11th St., New York, N.Y. 10003.

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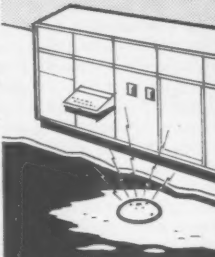
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AMA Notes Marked Increase In DP Seminars

By Bob Johnson

CW New York Bureau

NEW YORK — Corporate management is hungry for computer knowledge. So much so that the American Management Association (AMA) said that seminars on DP given by its Information Systems and Technology Divisions have shown a marked increase in the number of courses created, the frequency with which they are given and the number of managers who register for them.

A recent course catalog entitled "AMA Courses for Developers and Users of Computer Systems" lists more than 30 nontechnical computer courses designed to educate managers in the basics of computing. According to Holly DeVan, the Technology Division's manager, one fundamental DP course for the non-DP executive has tripled in frequency within the last 18 months.

DeVan maintained that the increased interest in all areas of computing has been evident to the AMA over the last 10 years, and the association's courses have evolved along with the current technology.

She said, for example, that office automation is becoming particularly popular among the membership, which is indicative of what is happening in today's market. Conversely, DeVan noted that courses on data entry have lost much of their appeal.

Current Courses

The AMA is currently offering courses in the areas of introductory DP, office systems and administration, business applications, technical skills (analysis and design) and DP management skills.

DeVan explained that through a combination of member feedback concerning past courses, advice from a three-member AMA team of industry product managers and the input from an industry advisory council, her division determines what types of DP courses will be most valuable to managers.

DeVan stressed that the AMA is primarily concerned with teaching managers DP and is not competing with standard DP educational bodies. "We attempt to teach computer vocabulary and basic concepts — not for the programmer or systems analyst, but for the user manager. We try to tell him [the user manager] who the technical DP people are and just what he can expect from them," she commented.

Handbook Out On Dimension PBX

BOSTON — Economics and Technology, Inc. is offering the fourth edition of its *Dimension PBX and Alternatives* handbook. The 270-page guide was designed to aid telecommunications managers to understand computer-controlled private branch exchange and telephone systems.

The handbook also includes a listing of major computerized branch exchange vendors.

The handbook is priced at \$150 from the vendor at 101 Tremont St., Boston, Mass. 02108.

'Connexions' Recruits DP Professionals Interactively

CAMBRIDGE, Mass. — An interactive computer/communications service for recruiting technical professionals has been introduced here by Professional Data Corp.

Called Connexions, the on-line service was designed to enable personnel, technical and general managers to list their help-wanted ads both demographically and geographically, receive applicants' resumes and then prescreen respondents with custom questions.

It is intended for use by employers of engineers, programmers, management information systems professionals and other hard-to-

find technical employees, according to Professional Data.

Existing Terminals

The Connexions service reportedly enables communications via existing terminals and personal computers.

Recruiters pay to display their ads in the Connexions electronic publication, entering their job listings onto predesigned screen formats from terminals and telephone modems in their offices. The fee for job listings is \$600 per advertisement.

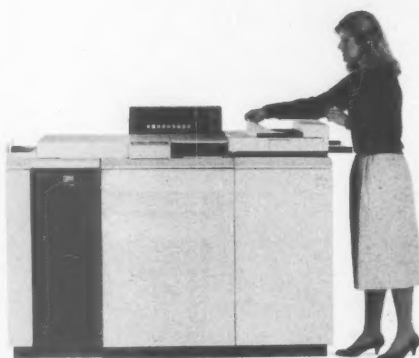
Potential readers of Connexions are said to include anyone with ac-

cess to a computer terminal or personal computer, according to a vendor spokesman.

Job seekers will pay a nominal subscription fee to view the electronic publication for up to four hours during each two-month publication period. They can respond electronically to job listings with a resume. Professional Data explained that recruiters have exclusive access to resumes submitted.

More information about the Connexions service is available from Professional Data at 55 Wheeler St., Cambridge, Mass. 02138.

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Before Commission on Software

Four Proposed Changes to Copyright Act Aired

By Lois Paul
CW Staff

WASHINGTON, D.C. — Four changes to the Copyright Act proposed by the chairman of the Software Protection Committee of the Association of Data Processing Service Organizations (Adapso) were described before a recent meeting here of the Commission on Software Issues in the Eighties.

The commission was formed in April 1980 to explore the possibility of a cooperative effort among a number of computer-oriented associations, to define the critical issues facing the software industry in the '80s and to propose coordinated recom-

mendations for the solution of these problems.

Ernest Keet, chairman of the Adapso committee, reviewed the committee's findings regarding the problems in obtaining effective legal protection for software as well as its practical recommendations, including legislation to improve the current laws dealing with software protection.

First Steps

The four changes to the Copyright Act proposed by the Software Protection Committee are intended to be the first steps in clarifying the protection available to computer soft-

ware under copyright.

The first proposal is that the definition of computer software used by the World Industrial Property Organization in its proposed Model Provisions on the Protection of Computer Software be included in the Copyright Act.

According to the committee, this would make explicit that copyright protection is available for a "program description," which determines the set of instructions that would constitute a corresponding computer program. The Software Protection Committee believes this would mean that using the detailed logic of a program description would be an in-

fringement even if the code is in a different language.

The second proposed change detailed by the Adapso committee chairman would make explicit that maintaining copyright protection does not in any way preempt any rights a copyright owner may assert under state trade secret laws. This was designed to address the concern that trade secret protection might be denied on the grounds that federal laws such as the Copyright Act preempt application of state laws such as trade secret laws.

Public Disclosure

Because trade secret protection also is nullified by public disclosure, the third proposed change insures that use of a copyright notice on a protected work does not, in and of itself, constitute publication, which might be considered a form of public disclosure.

Keet said the fourth proposed change is to direct the registrar of copyrights to provide for the secure deposit of computer software. This is intended to insure that registering a work with the copyright office does not interfere with trade secret protection. According to Keet, since materials deposited with the copyright office are open to the public, there is some question as to whether the ability to claim trade secret protection would be lost if the work were deposited without some limitation on access.

Discussion of these proposals by the Commission on Software Issues in the '80s largely centered around the problems of the coexistence of copyright and trade secret protection. For example, in order to obtain the full benefits of copyright protection, including the ability to sue for infringement and claim statutory damages and attorney's fees, the copyright law requires that the work be registered and deposited with the copyright office.

What Is Copyrightable?

Although this protection is desired, the commission members noted that the question of losing trade secret protection seems to present problems. However, the copyright law requires that the registrar of copyrights determine if a work contains enough "authorship" to be copyrightable. Keet reported that the Adapso committee is seeking some alternative to the present deposit system, which will avoid the present conflict with maintaining the secret status of a program.

The commission members also discussed the practice of the copyright office to request the deposit of source rather than object code. This practice also results from the requirement of determining "authorship." It concerns software vendors because of the disclosure and the danger of piracy.

Both commission members and the Adapso representatives raised questions regarding the future of software protection legislation and considered the relative merits of working within the scope of existing law or seeking special legislation.

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Communications Users Said Facing Bright Future

By Bob Johnson

CW New York Bureau

NEW YORK — Communications systems users can look toward a bright future, based on presentations at a recent seminar here on the communications industry.

Speakers at a two-day seminar on "The Future of the Communications Industry" sponsored by The Yankee Group of Cambridge, Mass., addressed topics ranging from satellite data networks to the potential impact of the divestiture of AT&T on the industry. And regardless of the subject being addressed, satisfying user needs was the main area of concern for all of the speakers.

Howard Anderson, managing director of the Yankee Group, kicked

off the talks with an explanation of AT&T's current influence on the communications industry. He noted the company's strengths and weaknesses and pointed to corporate executives, who he said are somewhat reluctant to use computers at their desks, as a prime market area for AT&T to combine existing telephone systems with personal computing.

Users are looking for a type of display phone that offers "next generation personal computing capabilities," according to Anderson. The device should have display phone features, emulate 3270 Ascii, have access to IBM 3270 software and be physically attractive so that it can blend in with the corporate executive's environment, he said.

Anderson explained that desktop computing is a strong market for the communications industry and cited the advantages of entering this market from the communications side. If a vendor gets its private branch exchange into an office via telephone installation the peripheral equipment (personal computers) will follow.

"The executive as user will require only casual use of the computer. He is not going to be looking for massive files," Anderson noted, pointing out that the combination of computer and telephone is a natural method of gaining executive user acceptance.

AT&T representatives voiced concern about providing user satisfaction later in the seminar. During a

presentation on the future directions of AT&T's long-haul network, Jim Carrol, director of market development for the company, said that AT&T feels flexibility in its systems is the key to the firm's future.

AT&T's criteria for future network design incorporates three elements — user needs, technological capability and economics, according to Carrol. Keeping in mind the business community's needs, AT&T sees a requirement for a network that synthesizes all of the elements of computer communications, office automation, teleconferencing and voice communications.

Our network must serve the user's needs in terms of bit rates, information quantities, information densities, diversity of terminal vintages and capabilities and service access, he stated.

Technological Trends

Speaking about trends in digital technology, Carrol said that economics and user demand will greatly influence AT&T's Integrated Services Digital Network (ISDN). "As the costs to maintain such a network decline, as they have been, and the customer demand increases, ISDN will grow. The network must serve a variety of applications and be internationally standardized," he added.

Looking toward 1990, Carrol predicted that AT&T will have "sufficient" digital capabilities within a network that will combine both analog and digital transmissions. He maintained that there will be an evolution in local-access networking, stating that 80% of AT&T's loops are now nonloaded and that by 1990 they should become digital capable.

Law Seminar Out in Print

SPRINGFIELD, Va. — The Computer Law Association, Inc. has published a reference work entitled "Computer Software Protection: A Pragmatic Approach." The volume is an edited transcript of the proceedings of its seminar last fall, which was co-sponsored by the U.S. Copyright and Patent Offices.

It includes presentations on what software is, physical methods of software protection, issues and examination procedures relating to software, trade secret protection of software, copyright protection issues and examination procedures relating to software.

Among the speakers whose presentations are included are Gerald Mosshoff, commissioner of patents; Roger Milgrim, author of a treatise on trade secrets; Michael S. Keplinger, chief of the information and reference division of the U.S. Copyright Office; and Jon Baumgarten, ex-general counsel of the Copyright Office.

The edited transcript is available for \$50 for members of the Computer Law Association and \$75 for non-members. It can be obtained by contacting the Computer Law Association, c/o Daniel T. Brooks, 6106 Lorcom Court, Springfield, Va. 22152.

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Analyst Hails '80s as Decade Users Will Determine Shape Of Information Systems

By Bob Johnson

CW New York Bureau

NEW YORK — "The decade of the '80s is the decade of the user," according to Ulric Weil, computer industry analyst and a principal at the firm of Morgan Stanley & Co., Inc.

Speaking at a press conference here recently to introduce his book, *Information Systems in the '80s: Products, Markets and Vendors*, published by Prentice-Hall, Inc., Weil maintained that the '60s and '70s were driven by manufacturers and vendors whose technology shaped the computer industry. But the needs and desires of the user will influence what shape the information systems market will take during the '80s, he said.

"The '60s and '70s were supply-driven times in the computer industry; however, this decade is a different story. The user's needs and desires will have a direct influence on what vendors will offer and on the prices. The user decade of the '80s will be demand driven," Weil said.

Weil pointed out that traditionally separate information processing disciplines including DP, communications, word processing and intelligent copying are converging into "solution-oriented" systems referred to as information systems. The products and services supplied by these information systems are becoming used in all aspects of life including government, business, factories, farms and homes, he maintained.

Dominance of User Demand

The dominance of user demand means that manufacturers will have to invest in plans for offering almost instant delivery of products, according to the analyst. He added users will also require ease of use and without it, they will suppress the overall acceptance of these systems.

"Systems will have to be both economically and physically attractive. Today we have ugly equipment sitting on top of desks," Weil noted.

The analyst cautioned that systems that are attractive to the user must be delivered relative to the demand function without restraint. He said, however, that vendors are currently restrained by the slowdown in macro economic growth and corporate bureaucracy. "It will take most of this decade for vendors to supply users with the information systems they truly need. Things will have to get worse before they get better," Weil said, arguing that vendor corporations must rid themselves of the bureaucracy that is plaguing them. He suggested these firms become "flat" organizations, eliminating much of the middle management that adds to the bureaucracy problem.

The key aspect of information systems for this "decade of the user" is applications, according to Weil. He said that office automation, factory automation, farm automation and home automation will require application systems, and this demand will be felt by vendors more than the demand for hardware.

The shortage of computer programmers and operations personnel will become less crucial because of the ready availability of information, Weil noted, reasoning that as more people gain access to systems, the market demand for technical specialists will shrink. "Firms will be able to recruit people otherwise unavailable because there will be more professional use of the computer at home. In addition, people will become more knowledgeable about the concepts of information processing," Weil said.

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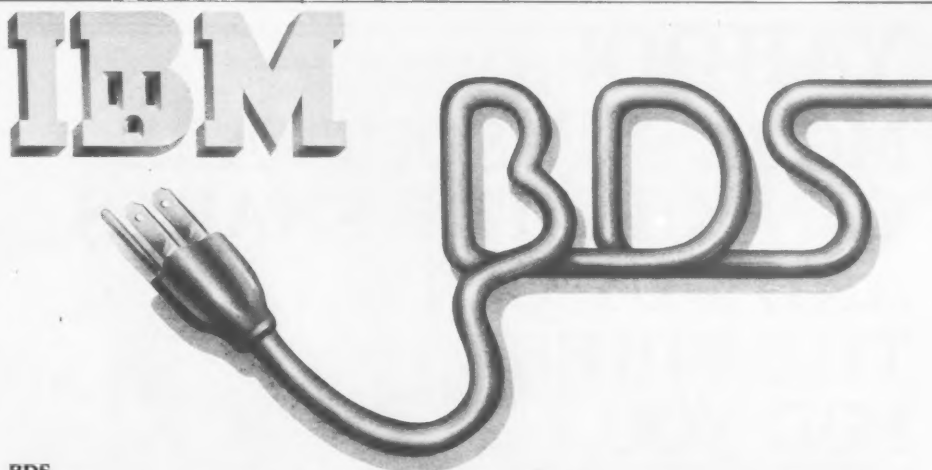
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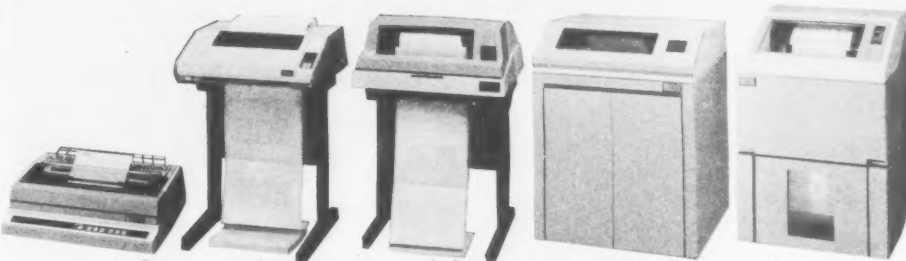
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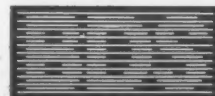
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Report Evaluates Popular Micros

EAST SUSSEX, England — Management Information Corp. has announced a spotlight on business microcomputers, which evaluates six popular microcomputers.

The spotlight gives hardware and software descriptions and pricing and technical information for the IBM Personal Computer, the Radio Shack TRS-80 line, the Commodore Business Machines, Inc. CBM 8000 series processors, Apple Computer, Inc. Apple III processors, Osborne Computer Corp. processors and Televideo, Inc. systems.

The report costs \$79 and is available through the firm's U.S. office at 14 Barclay Center, Cherry Hill, N.J. 08034.

SCS Conference Set for October

SAN DIEGO — The Peripheral Array Processors Conference, sponsored by the Society for Computer Simulation (SCS), will be held at the Bahia Hotel here Oct. 21-22.

The conference is aimed primarily at industrial users of array processors and anyone who believes he might need an array processor. Thirty-minute presentations will be given by representatives of major array processor manufacturers.

Before Sept. 15, the registration fee is \$180; after that date, it is \$200.

SCS can be reached through P.O. Box 2228, La Jolla, Calif. 92038.

Security Analyst Forecasts With Home Desktop System

By Susan Blakeney
CW Staff

BRONXVILLE, N.Y. — Ken Noble is not clairvoyant, although the accuracy of his forecasting might give that impression.

Noble is a security analyst employed as the vice-president of research by the Paine Webber Mitchell Hutchins investment firm on Wall Street, as well as the current president of the New York Society of Security Analyst. For a living, he predicts things like the course of next year's advertising revenues, potential cable TV growth and projected paper costs. To help out with these analyses, he relies heavily on his

home desktop computer system.

The system, comprised of a Hewlett-Packard Co. HP 9845 desktop terminal with an HP plotter, printer, disk drives and HP statistical software was a gift Noble gave to himself to get a handle on his personal media research library.

Unlike the other systems he surveyed, the HP 9845 can reportedly perform elaborate regression analyses and obtain statistical results accurate to 12 digits. The system can also be expanded to up to 449K bytes of random-access memory. Noble has 179K bytes of main memory, with the HP 9885 disk drive providing an additional 500K bytes of storage per removable disk.

Noble said he was a novice when he bought the computer. Armed with a one-week course from HP, he went on to teach himself enough about the system to write his own graphics program in a specially enhanced version of Basic.

A shelf of software programs attests to Noble's use of standard packages from HP, but he is particularly proud of the graphics program he wrote for his own requirements.

"I'm visually-oriented and like to illustrate my reports with graphs and charts. It used to take me hours to prepare my own graphics by hand, and I found that the standard graphics software package was not quite appropriate either.

More Flexibility

"For one thing," Noble continued, "the log scale was on the horizontal axis, whereas in our field we customarily place it on the vertical. Also, I wanted to represent more than 10 variables on a single graph. In 1980, I designed my own program and have become more and more impressed with the beauty of the results."

Using HP's Image/45 data base management system, Noble has access to a centralized resource from which he selects up to 50 variables for display. He then chooses from a menu of several hundred different physical modes of representation. Thus, his graphs can be linear or semilogarithmic, he explained, or they may consist of standard bars or overlaid bars.

For Noble, one of the most efficient features of this system is its ability to produce different type sizes in uppercase and lowercase so that regardless of the dimensions of each graph, the type is always uniform and ready for insertion into a standard Paine Webber report, he said.

At 52, Noble says he is one of the oldest security analysts in the business. To some extent, the computer has been his way to close that age gap, both personally and professionally.

"I find the real way to be original and make breakthroughs is by taking the time to try new models and ask 'what-if' questions at home on the system," Noble claimed.

Overall, the system has not reduced Noble's work load at home, but has increased the proportion of time spent doing "real work" and gaining new abilities, he said. "The computer is my assistant," Noble concluded.

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Report Analyzes, Describes Software Development Tools

WASHINGTON, D.C. — More than 300 software development tools are described and analyzed in a report that is available from the National Bureau of Standards' Institute for Computer Sciences and Technology.

"Software Development Tools" (SP 500-88) profiles tools by their capa-

bilities, hardware and software requirements and availability. The publication was designed to aid users in identifying the tools that will be helpful for their specific applications.

Subjects covered include software management, control and maintenance tools; source program analysis and testing tools; software modeling and simulation tools; and program construction and generation tools, among others.

The book costs \$6.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Order by stock number 003-003-02389-2.

Directory Aids Mini Users

FORT COLLINS, Colo. — The International Software Database has released a minicomputer directory said to be fully indexed and searchable by machine, operating system, high-level language, subject, vendor and price.

In addition to the system-compatible information, a detailed description is provided along with information on the warranty, special configuration requirements, source code and update availability and other related programs. The directory will offer quarterly updates.

As a backup service, the company will provide review information for a given program as well as advice on which operating system and language a given system will support.

The directory costs \$69.95 from ISD at 1520 S. College Ave., Fort Collins, Colo. 80524.

Sourcebook Out On Small Systems

GLENVIEW, Ill. — *The Small Systems Software and Services Sourcebook* has been published by Information Sources, Inc. for minicomputer and microcomputer users.

The 500-page directory is comprised of information on 1,300 software programs, including business applications, report generators, program development aids, file managers and word processing programs. It describes which programs are compatible with what hardware.

The software described in the directory is for equipment from vendors including IBM, Digital Equipment Corp., Apple Computer, Inc., Tandy Corp., Data General Corp., Hewlett-Packard Co. and Honeywell, Inc.

The Sourcebook is available at a one-year subscription rate of \$125, according to Information Sources, Inc., 1807 Glenview Road, Glenview, Ill. 60025.

Handbook Lists Service Firms

PALMYRA, N.Y. — The Service Research Group has announced the *Handbook of Independent Service Companies*, scheduled for release in the third quarter of 1982.

The handbook lists hundreds of service firms by name, type of equipment serviced, size, software capabilities, geographic coverage and contract terms, the spokesman for the vendor said.

The publication costs \$995, the vendor said through P.O. Box 335, Palmyra, N.J. 08065.

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Managers on the Move

BILL PHILLIPS has been named manager of management information services (MIS) and data processing for the Insulating Products Division of Babcock & Wilcox, Inc. in Augusta, Ga.

Formerly, Phillips worked for McDermott, Inc., Babcock & Wilcox's parent company, where he was lead systems analyst.

He graduated from Mississippi State University with a B.S. degree in computer science.

the state of New York and Electronic Data Systems, Inc. and served in the U.S. Air Force as a captain.

He is a graduate of George Washington University and holds a B.A. degree and a master's degree in economics and electronic data processing.

JEFFREY FLINCHBAUGH has been promoted to manager of data processing for

Insurance Servicing & Information Systems Corp., headquartered in Rockville, Md. He will be responsible for the corporate data processing operations.

Before joining the company, he was a lead technical specialist for National Conserv, Inc. and was a systems test engineer at Digital Equipment Corp's Vitro Laboratories.

Prior to that he was in the

U.S. Navy for six years, three of which he served as a systems technician.

FRANCIS F. MICHAUD has been named manager of corporate information systems for Avco Corp. in Greenwich, Conn. He will be responsible for coordinating the information systems activities of Avco's 17 data centers and for the acquisition of computer hardware and soft-



Bill Phillips

PHILIP C.J. SATTLER has been selected as vice-president in charge of information systems at Melody Farms Dairy in Livonia, Mich.

Before his employment with Melody Farms, he was a freelance consultant and was instrumental in the implementation of the dairy's call-in order, production scheduling and delivery systems.

He received a B.S. in physics from Iona College and an M.S. from Ithaca College.

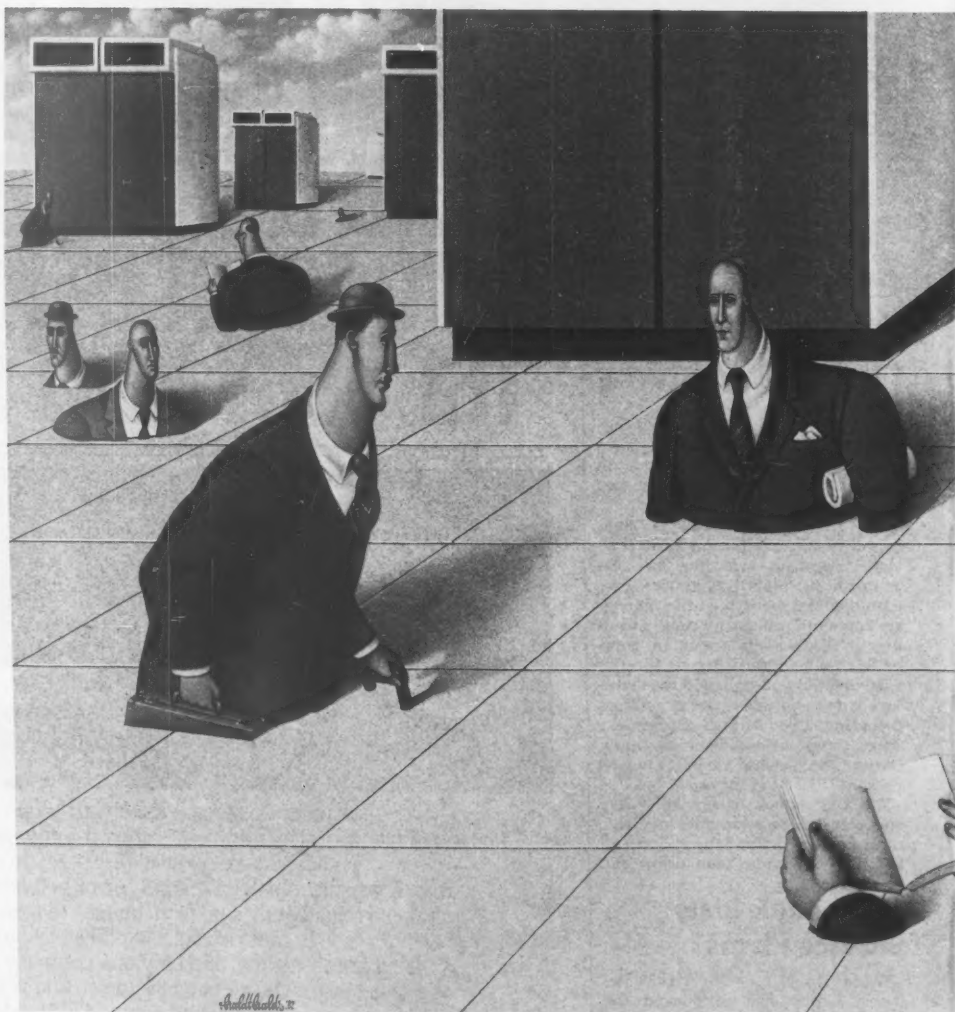
SUSAN HAWTHORNE WOOD has been appointed computer center director of Southwestern Technical College in Sylva, N.C. She is responsible for the planning, development and management of the college's management information system needs.

Wood formerly was a systems analyst with Stencel Aero Engineering Corp. While earning her master's degree, she taught information systems at Western Carolina University. Before that, she was an independent data processing consultant for five years and also worked as a programmer for Home Federal Savings and Loan Association in San Diego.

Wood earned both her MBA and B.S. degrees in business administration from Western Carolina University.

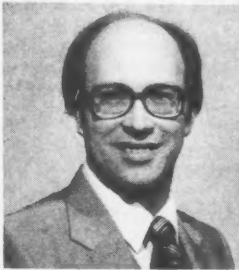
JOHN L. DIESEM has been appointed vice-president of the McGraw-Hill Book Co. in New York City and in this capacity he will continue to serve as director of business systems development. He is responsible for the design and implementation of all administrative systems, the support and guidance for the company's subsidiaries that have DP organizations and technical support for the microcomputer software product development efforts of the various divisions.

Before joining McGraw-Hill, Diesem was a senior manager in the administrative services division of Arthur Andersen and Co. Previous to that, he held management positions with



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Managers on the Move



Philip Sattler

ware.

Previously, Michaud was a member of the corporate staff of Avco Computer Services (AVS) located in Wilmington, Mass. He joined AVS as a senior information systems analyst and was later named manager of program products. Prior to joining the corporation, he was an information systems analyst with Aetna Life and Casualty Co. Before that, he served three

years in the U.S. Army, attaining the rank of lieutenant.

He received his B.S. degree in commerce and economics from the University of Vermont.

JAMES E. MYERS has been designated an assistant vice-president in First Pennsylvania Bank's data processing department, based in Philadelphia. He will serve as a

data processing manager in the bank's Caribbean region.

Before joining First Pennsylvania in 1981, Myers served as a programmer for Canberra Industries in Meriden, Conn. Prior to that he was employed as a senior program analyst with Wallace Silversmiths and as a senior programmer with Connecticut Bank and Trust.

He studied data processing at the Ward School.

THOMAS KULAK has been selected manager of systems development, data services, for the Zurich-American Insurance Companies in Schaumburg, Ill. In addition, ROBERT PARSONS has joined the company as systems development consultant for the data services operations management department. DENNIS WENK has accepted the position of data services consultant; he will provide consultation on the development and support areas of data services operations.

Kulak joined the company one year ago as a systems development consultant in the data services department. Prior to joining Zurich-American, he was associated with CMB, Inc., as a manager of consulting for two years and with Consumer Systems, Inc. as project manager for two years.

Parsons served as a staff analyst with Allstate Insurance Co. and the American Hospital Association before affiliating with Zurich-American. He holds a B.S. degree from Purdue University and a master's degree in applied math statistics from Rochester Institute of Technology.

Wenk formerly served as a DP audit consultant with Beatrice Foods. Previously, he was project manager for CBM Consulting and was a senior consultant with Consumer Systems Corp. He has an A.A. degree in data processing from Moraine Valley Community College and received his B.A. degree in computer science from Northern Illinois University.

GENE QUINTIERI has been promoted to vice-president of MIS at Canadian Fur Trappers Corp. of Newark, N.J.

He joined the company as DP manager and was later promoted to director of MIS. Before that he served as assistant DP manager for General Instrument Corp. in Clifton, N.J.

He earned an A.A. in marketing with a minor in computer science at Somerset County Community College and is a candidate for a B.S. degree in marketing and computer science at Rutgers University.

JAY KOETTER has rejoined Republic Bank Houston as vice-president of data processing.

He returns from Houston Shell and Concrete where he served two years as DP manager. Before his departure he was vice-president of systems and programming.

Koetter received a B.S. degree in business administration from Houston State University.

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And with a major commitment to R&D, Memorex will continue to introduce significant enhancements to currently available product offerings. On the way, for example, is our substantially improved version of the 3380 disc storage subsystem using thin film technology.

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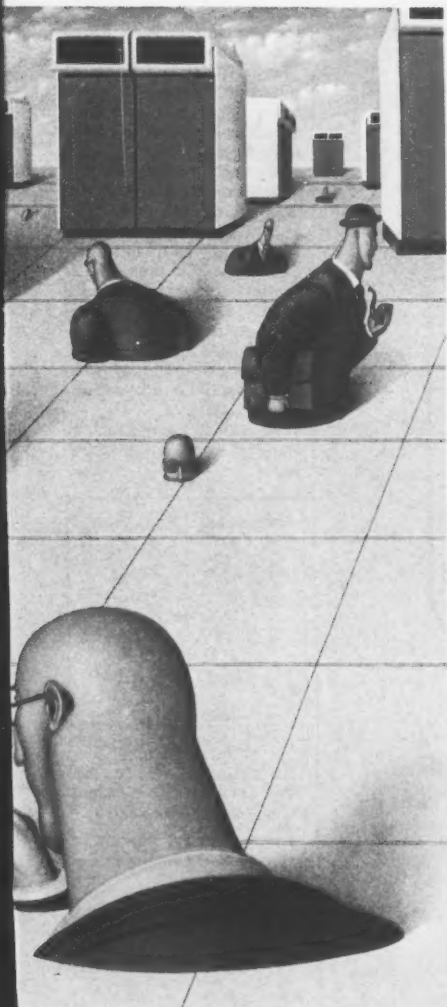
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Dema Meet Slated Oct. 4-6

NEW YORK — The Data Entry Management Association (Dema) will hold its annual conference and exhibition here Oct. 4-6. Industry leaders and data entry managers will share with conference attendees information needed for the future and help them sharpen their personal skills and knowledge to meet the challenges facing them, according to Dema.

Among the topics to be covered are advances in technology such as voice entry, optical character recognition and handprint entry, developments in personnel motivation techniques such as quality circles and incentive plans and job development. Registration costs \$350 for members; \$395 for others from Dema through P.O. Box 3231, Stamford, Conn. 06905.

For 'Hall of Fame'

Nominees Sought for IIA Award

WASHINGTON, D.C. — The Information Industry Association (IIA) is seeking nominations for its annual Hall of Fame Award. The award recognizes an individual who has contributed significantly to enhancing the integrity of the industry either by a single achievement or an overall contribution.

Nominees need not be currently affiliated with the in-

dustry, the IIA or a member firm. Any person who has made a distinguished contribution, past or present, is eligible. Nominations may be submitted by anyone.

A panel of judges, chaired by Daniel Sullivan, president of Frost & Sullivan, will evaluate the credentials provided in supporting data to the IIA. The award will be presented at a special awards

banquet during the IIA's 14th annual conference Nov. 8-11.

More information is available from the IIA at Suite 400, 316 Pennsylvania Ave. S.E., Washington, D.C. 20003.

AEA Honors IBM's Cary With Award

PALO ALTO, Calif. — The American Electronics Association (AEA) has selected IBM chairman Frank T. Cary to receive its annual Medal of Achievement award.

Scheduled to be presented at the AEA's annual meeting Oct. 21 by AEA chairman William R. Thurston, the medal is awarded for "significant contributions to the advancement of electronics." The award is given for the recipient's overall achievements in the electronics field, rather than for a specific invention. Service to the community, government and educational institutions are also considered, the AEA said.

Past honorees include William C. Norris, president of Control Data Corp.; Kenneth H. Olsen, president of Digital Equipment Corp.; and David Packard and William R. Hewlett, cofounders of Hewlett-Packard Co., the organization said.

The AEA is located at 2680 Hanover St., Palo Alto, Calif. 94304.

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System Helps Electric Firm Generate Efficiency

SAN JOSE, Calif. — An electronic mail, filing and retrieval system has cut document turnaround time from two weeks to two days for the Nuclear Engineering Division of General Electric Co.

The text processing system, consisting of an AM Jacquard 100 computer, 55 J105 satellite workstations and 35 NEC Information Systems, Inc. and Electronics USA,

Inc. printers, was installed in early 1981, according to Robert Exton, manager of automated office systems for the Nuclear Engineering Division.

AM Jacquard was recently sold to Applied Technology Ventures, and is now known as ATV-Jacquard, a firm spokesman noted.

The Nuclear Engineering Division, which employs ap-

proximately 8,000 people, handles the design work and specifications for construction of nuclear power plants for GE, according to Marjorie Fleming, a specialist in office automation for the engineering services operation. In addition, it handles the manufacture of nuclear fuel for GE at a North Carolina plant.

No Changes

The J100 required no changes in work performance, Exton said. The J100 also supports Basic and the forms package originally provided by Jacquard with its Data-Rite software package, he added. Since data input and output formats appear on the screen, an operator's input time is reduced and chance for error eliminated.

Exton began looking for a text processing system in May 1980 after determining that an optical character reader (OCR) was cost-justifiable. Studies indicated it would save rekeying thousands of technical specification pages monthly and eliminate hundreds of hours of work. Previously, the group used a paper tape machine, which would have been incompatible with the OCR.

Exton and Fleming examined processors from eight companies, including Wang Laboratories, Inc.; Digital Equipment Corp.; Hewlett-Packard Co.; and Xerox Corp. As part of their analysis they decided to conduct a benchmark test.

Specific Requirements

Each supplier had to meet specific technical and scientific requirements, including the availability of the Greek alphabet.

Because their application is in engineering, which involves use of equations, Exton explained, users at the workstations wanted the system to show equations on the screens as well as print them out.

Two other features of the AM Jacquard system moved that firm into first place, Exton said. The multifunction computer is programmable while the J100 is a shared-resource system, he said. The J100 can accommodate multiple users simultaneously and can handle enormous volumes of documentation required by the engineering group, he added.

Typewriters

Anything subject to revision, Exton said, such as organization charts, statistical tables, reports and historical analyses, should not be prepared on a typewriter. Projects requiring repetitive and

revision typing are now sent to the text processor. Five separate GE buildings in San Jose are connected to the electronic mail system, Exton said, with the furthest three miles from the central GE office.

Two stand-alone J500s were installed at a site 17 miles away at Vallecitos but are not operational, Exton said. The bisynchronous software driver and the electronic mail packagers were too large to exist on a floppy disk, Exton said.

ATV-Jacquard is currently trying to shrink the packages down to exist on a floppy.

In one month, Exton explained, J100 operators key-stroked 156 sets of specifications, totaling 2,200 pages. "In addition, if you consider that each plant requires system operations and maintenance manuals, running up to 12,000 pages, you quickly understand the tremendous production requirements of the system," he said.

One important part of text processing storage and retrieval, Exton noted, is the fact that records on all safety aspects of a nuclear power plant must be maintained for 60 years after it becomes operational.

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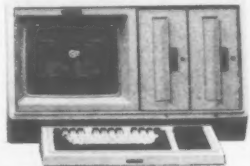
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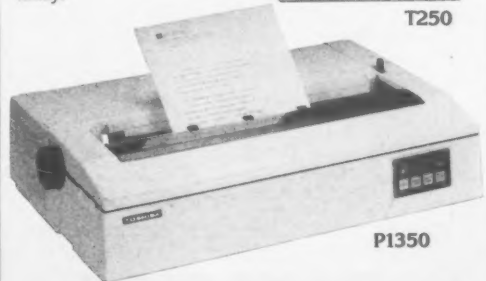
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Center, Battelle Memorial Institute, 505 King Ave., Columbus, Ohio 43201.

• "Educational Services Course Planning Guide" describes all training programs currently available to

end users and OEMs. Included in the guide are recommended sequences of courses for programmers, operators and other staff members working in different operating system environments.

The training program guide can be obtained from Data General Corp., Corporate Educational Services, 4400 Computer Drive, Westboro, Mass. 01580.

• "How To Be a Consultant" is a free report on careers in consulting for engineers, computer scientists and technologists that identifies successful career paths.

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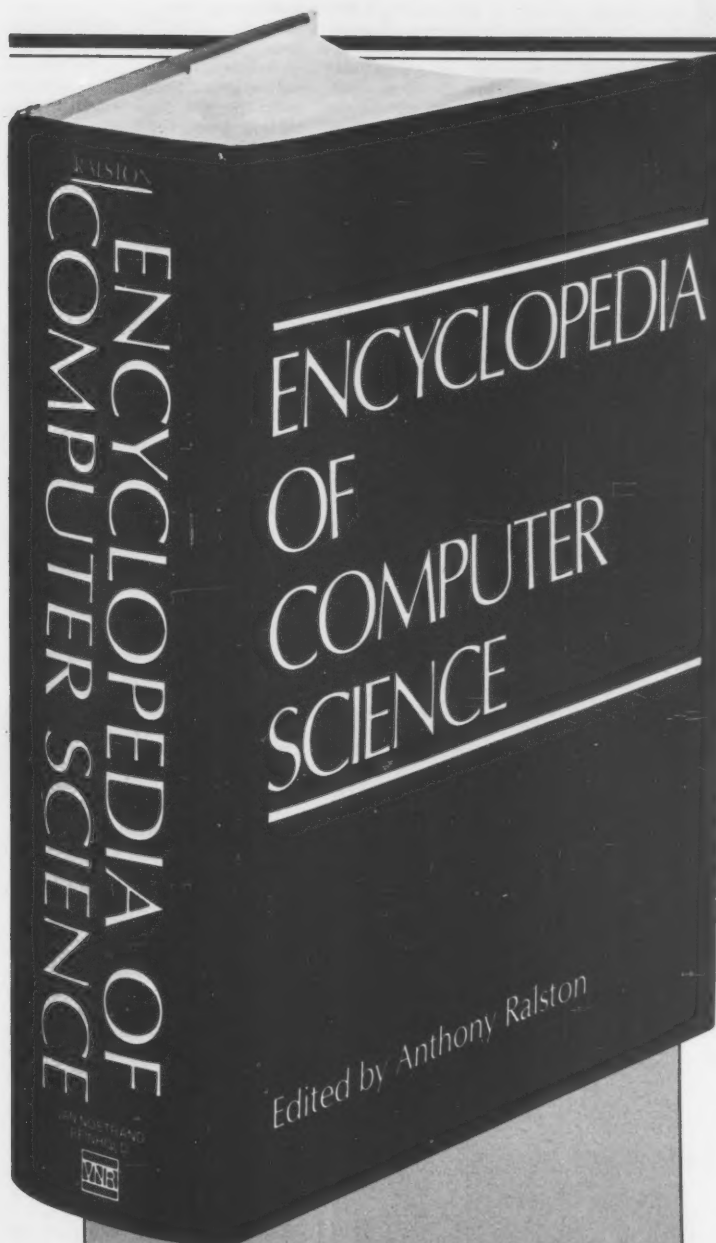
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How to Get the Entry-Level DP Jobs?

Q I work at a technical school that offers a six-month course in computer programming. A graduate of the course receives a diploma earmarked "Computer Programming Specialist." The course involves learning Basic, Fortran, Cobol and business systems analysis and design.

It seems that no one wants to hire an entry-level programmer.

How does one get to be that most sought-after "experienced" programmer if no one will hire someone fresh out of school?

A The graduates of your six-month program are competing for a limited number of entry-level positions with holders of associate degrees who are competing with holders of bachelors' degrees who are competing with holders of masters' degrees. Entry-level positions are much more difficult to obtain today than they were 18 months ago. The "experience-only" attitude among companies has reached epidemic proportions. Read on.

Q Your response to the person with the associate degree inquiring whether IBM experience is necessary, does not apply — at least in the Northwest. I have over seven years' minicomputer experience in all areas of business applications software. My experience includes assembler-type languages and PL/I.

My problem is that all of my experience is on non-IBM equipment. No one will even interview me because I have no work experience in IBM Cobol. What do I do?

A I receive letters like yours with ever-increasing frequency. Recruiters are turning flip-flops in search of the elusive experienced specialist. The money and time spent on the search could just as well be channeled into educating someone with related experience.

Your situation is not unique. You are part of a large pool of people with the "wrong" type of experience. I fully anticipate that within the next year, companies will recognize and begin to tap the potential of this group.

In the interim, you can increase your marketability by learning Cobol. Continue to make companies aware of your availability and education objectives. Please read on.

Q One of your readers expressed his frustration concerning programmer/analyst employment requirements, and you indicated that his background apparently contained "ample credentials." I find myself in a similar situation, but have found that entry-level position requirements ask for "experience only."

For the last several months I have reviewed *Computerworld* and other sources only to find — "experience only." I have interviewed with several companies and found that they were interested not in what I have to offer, but in what I don't have to offer. I have contacted and interviewed with the local DP employ-

ment agency but to date have not received even a "possible interest" phone call. Lastly, I have contacted various divisions within my current employer (software) and found the same philosophy — train elsewhere, then we'll talk.

Apparently, training is not part of most companies' vocabulary.

A Every company committed to the use of computers should support an active in-house education program, including entry-level education. The pool of experienced personnel is running dry. The industry has entered a vicious circle in which the hiring of someone with experience invariably means the loss of someone with ex-

perience. This "experience-only" attitude can only result in a drain on corporate profits.

This attitude is an outgrowth of a justified lack of confidence in the practical abilities of college graduates of the early '70s. Today's graduates no longer require eighteen months of training. Most can become productive contributors within a couple of months. The same can be said for experienced users like yourself who are seeking a career change. The user of today is much more sophisticated.

This is food for thought for those companies who have adopted the "experience-only" attitude. Perhaps it will improve your plight and the plight of others seeking entry-level

Turnaround Time By Larry E. Long



management information systems employment.

Long is a professor at Lehigh University, a DP consultant and author. If you have a question you'd like him to address, send it to Larry Long, Editorial Department, Computerworld, P.O. Box 880, Framingham, Mass. 01701.

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Interkomputo is accepting papers for the symposium that will review both theoretical foundations and practical applications of computing science in order to aid international technical communications. Topics include basics of the analysis and synthesis of programs, the theory of data structures, program complexity, formal languages, cybernetics, artificial intelligence, robotics, user-friendly computing systems and other related topics.

Papers should be typed double-spaced and not exceed 12 pages. They should be sent with a one-page abstract before Sept. 10. Both the paper and the abstract must be written in the international language, "Esperanto." For translations of papers, contact the Esperanto organization in the U.S., which is the Esperanto League for North America, P.O. Box 1129, El Cerrito, Calif. 94530. The abstract and paper should be mailed to Interkomputo '82, NJSZT, H-1368 Budapest, pf. 240, Budapest, Hungary, Europe.

EDP AUDITORS FOUNDATION & AUTOMATION TRAINING CENTER THIRTEENTH CONFERENCE ON COMPUTER AUDIT, CONTROL AND SECURITY '83, Chicago, Ill., May 9-13.

The EDP Auditors Foundation and the Automation Training Center are seeking papers for presentation at the conference. Suggested topics include, but are not limited to, networks and distributed processing; data communications; auditing data base systems; reviews of operating systems; access control software; controlling on-line systems; auditing software acquisition; how to plan, conduct and document DP audits; how to determine control requirements and auditability in advanced systems.

A one-page abstract of the suggested presentation and a brief resume, including business telephone, should be submitted no later than Oct. 15 to Harold Weiss, Program Chairman, Automation Training Center, Inc., Suite 17, 11250 Roger Bacon Drive, Reston, Va. 22090.

NATIONAL ON-LINE MEETING '83, New York, N.Y., April 12-14.

Papers are being solicited for publication and presentation at the annual conference. Suggestions for topics are welcome. Subjects already being considered are personal computer networks for information exchange, full-text data bases, end users vs. intermediaries, current and future research, facsimile transmission, advances in teletext and videotex, electronic mail and teleconferencing, electronic publishing, marketing of information services and products, business information on-line, data base machines, the international information scene, economics of on-line in the library, educational training for on-line, the role of minis and micros, research on user behavior and numeric data bases.

If you would like to submit a paper, write to the program chairman by Aug. 23, giving brief details of your proposed paper, including title and abstract. Completed typescripts of papers are required by Dec. 1. A \$500 award will be given for the best paper presented at the National On-line Meeting. Only papers received by the Dec. 1 deadline will be eligible for this award. Submissions and correspondence should be directed to Martha E. Williams, Program Chairman, National On-line Meeting, University of Illinois, Coordinated Science Laboratory, 1101 W. Springfield, Urbana, Ill. 61801.

LIBRARY AND INFORMATION TECHNOLOGY ASSOCIATION (LITA) NATIONAL CONFERENCE '83, Baltimore, Md., Sept. 18-21.

Lita is inviting papers on current aspects of information and technology for its first national conference. Papers may deal with any aspect of current and future information technology — hardware and software, the impact of those technologies on the information process or specific recent and evolving processes in information technology. The conference, "Information and Technology: At the Crossroad," will address a wide range of topics including videodisk/videotape, library resource sharing and modern technology, the information poor, electronic conferencing and replacing the scholarly journal.

Submitted papers (two copies) should be typed double-spaced and are due Jan. 1. Papers should be sent to Michael Gorman, Chairman, Contributed Papers Committee, 246A Library, University of Illinois, 1408 W. Gregory Drive, Urbana, Ill. 61801.

COMPUTATIONAL ASPECTS OF THE FINITE ELEMENT METHOD (CAFEM) '83, Chicago, Ill., Aug. 29-30.

Cafem is soliciting papers for its seventh international seminar. Summaries are requested in the following categories: applications, algorithms and numerical methods, interactive graphics and computer-aided design, data management and the integration and verification of computing software, hardware and software requirements.

Additional information can be obtained from Dr. J.F. Cloude, Vice-President Marketing, MacNeal-Schwender Corp., 7442 N. Figueroa St., Los Angeles, Calif. 90041.

THE ASSOCIATION FOR COMPUTING MACHINERY'S SIGGRAPH '83, Detroit, Mich., July 25-29.

Previously unpublished papers detailing the most recent developments in graphics software, hardware and interaction techniques are invited for presentation at Siggraph '83.

For information, contact Peter Tanner, Siggraph '83 Technical Program Office, Division of Electrical Engineering, National Research Council of Canada, Ottawa, Ont., Canada, K1A 0R8.

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Family Film Firm Cuts Paperwork With System

CARSHALTON, England — Evenings are no longer spent on bookkeeping and the cash flow has improved at Rebel Films, Ltd. since the company added a small business computer to its operations a year ago.

Rebel Films is a family business that provides movie theater owners throughout Britain with promotional material and previews of coming attractions.

The 12-year-old firm has 500 customers who rely on it for materials that help promote and sell their films. "In a small family business you get lumbered with working every night," partner Maryvyn Collard observed. "At the end of every month, when statements are going to be issued, you know you've got to work a solid week in the evenings doing them."

Time Loss Great

For years, too much time was being spent on rendering statements, keeping the various ledgers and chasing bad debts, Collard recalled. He began to think of computerizing and spoke with several vendors and turnkey companies.

"Most dealers who sell small business computers talked technical jargon, which turned me off," he said. "I'm not interested in that — I wanted to know what the system could do for us, not how many megabytes it has or things like that."

Eventually, a friend put Collard in touch with a systems house that sells turnkey systems based on the Applied Digital Data Systems, Inc. (Addis) Multivision small business computer.

"I was very impressed with them," Collard said, "because they did things in a very down-to-earth manner — what the computer would do for me, how much it would cost me, how I could expand. In short, they told me everything I wanted to know."

Collard was sufficiently im-

pressed to order a Multivision system and several software packages to do some of his ledgers. After nearly a year of using the system, the firm's satisfaction is demonstrated by its recent upgrade to a Multivision II system.

The "solid week" of evening bookkeeping has been reduced to about two hours using the computer, Collard indicated. The savings has been from 25 to 40 employ-

ee-hours per month, he estimated.

Employees appreciate the timesaving and miss the error prone drudgery of manual account posting about as much as last winter's blizzards. For the business as a whole, a tighter control of money and credit has resulted, according to Collard.

"Since February, we've reduced our amount of money outstanding by about 50%,

thanks entirely to the Multivision system," Collard said. "We have our list hanging on the wall and if an overdue account wants material, we just tell them 'no.'"

"That's how we've managed to cut down our outstanding balance, making the cash flow much better," he explained.

Buoyed by his success so far, Collard is cautiously making plans for future ap-

plications. "We will probably go into order processing eventually and possibly word processing as well. All along the way, things were easy to accomplish, and the printouts and 'instant information' give our business a more efficient look," he noted.

"Our Addis turnkey system has brought a lot more fun back into the business," he concluded.

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Personal Computers Topic Of MIT Seminar This Week

CAMBRIDGE, Mass. — The Center for Information Systems Research (CISR) at MIT will hold a one-day seminar on personal computers here Aug. 18.

The seminar was designed to give participants a broad exposure to those issues most commonly faced by managers and organizations in the selection and use of personal computers. System configuration, selection criteria and end-user applications will be discussed.

The target audience is DP managers whose companies are being impacted by the advent of the personal computer but do not personally have extensive experience with microcom-

puters.

The seminar costs \$275. The seminar and a workshop cost \$350 together. The center is at MIT, E40-193, 77 Massachusetts Ave., Cambridge, Mass. 02139.

Babbage Institute Offers Fellowship

MINNEAPOLIS — The Charles Babbage Institute for the History of Information Processing is accepting applications for a Graduate Fellowship to be awarded during the 1983-1984 academic year.

The fellowship will be awarded to a graduate student whose dissertation will be on some aspect of the history of computing. Residence can be at the home academic institution, another institution with archival materials, at the Babbage Institute or any combination of institutions, a spokesman for the institute said.

The stipend for the fellowship is \$5,000, plus an additional \$2,500 for tuition, travel and other research expenses.

Applications must be received by Jan. 15 and should include biographical data and a research plan or design. Applicants should arrange for three letters of reference and certified transcripts to be sent to the Charles Babbage Institute, University of Minnesota, 117 Pleasant St. S.E., Minneapolis, Minn. 55455.

DEC Reformats Reference Set

MAYNARD, Mass. — Digital Equipment Corp. has announced a new format and a reorganization of its six-volume set of reference documents describing the corporation and its products. The DEC Reference Service (DRS) was designed for those requiring detailed information about DEC's computers, peripherals, software and associated products.

Typical users of the set volumes would be consultants, OEMs and university computer science departments. Software product descriptions are updated quarterly and a new topic index has been added. A price list is available as an option.

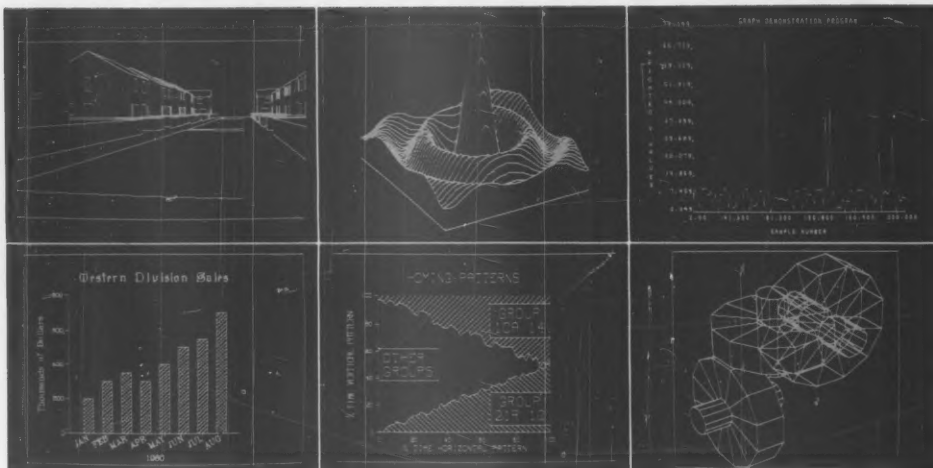
Subscription to the DRS is priced at \$295 from DEC at Mail Stop PK3-1/K21, 129 Parker St., Maynard, Mass. 01754.

Vendor Directory Updated for 1982

SILVER SPRING, Md. — The 1982 1/2 Software-Service-Vendor Directory for the IBM System/34 is available from Professionals Unlimited.

The directory reportedly covers over 100 applications and lists over 350 vendors. The directory contains over 800 separate listings. It is sent out on diskette so the user can print or view it using a System/34.

Vendor listings are free of charge. The directory costs \$29.95 from Professionals Unlimited at 3951 Lantern Drive, Silver Spring, Md. 20902.



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"New and Future Products"
Maggie Canon, Editor-in-Chief, *InfoWorld*,
Panel: "Personal Computers in the Office"
Howard Anderson, President, The Yankee Group
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Tuesday, DP Role in Office Automation

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"Achieving the Possible"
Patty Seybold, Editor, *The Seybold Report*
"Integration Issues in Office Automation"
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Defense, Space Manufacturer Finds Sky's the Limit With System

REDONDO BEACH, Calif. — Some 10 years ago, Bob Miller of TRW, Inc. here needed on-line facts and figures on project status from a combined batch and on-line data entry data base.

A half a million dollars was the price tag at that time for the project management system he wanted and there was some question as to whether it would be a good investment.

Today, Miller said, the system tracks budgets, actual costs, earned value and completion cost estimates for a large number of one-time-only defense and space projects. TRW manufacturers aerospace and communications satellite equipment. At any given time, 100 \$2 million jobs may be underway in the Defense and Space Systems Group, which encompasses three major operations in TRW.

"I understand why people were skeptical," Miller said. "It seemed expensive at the time and our existing batch system provided pretty good monthly reports. Conventional wisdom at that time was that you didn't need on-line capability for a system like [IBM's] project management information system (Pmis)."

Based on IMS

Pmis is based on IMS — IBM's data base telecommunications software program product — which extends the operating system's capabilities, a spokesman said. Several hundred IBM 3278 terminals provide access to two large computers — IBM 3032 and 3033 processors — which perform "the company's central processing as well."

Every project over \$2 million goes onto the system. "Each project we undertake is unique and there are important differences even between our production contracts," Miller said. "The objective is basically to keep detailed track of what's going on while it's happening. The more timely and accessible the detailed data, the better chance we have to stay on top of costs."

"We were a beta test site for IMS when it was first developed in the late 1960s," Miller said, "and I believe we were the first company to implement a cost data base under IMS. Since we got into IMS so early, we were thoroughly familiar with it and realized how it could be utilized to help us develop a better project management system."

Three people were brought in from other TRW depart-

ments who were not computer professionals but who used the project management system. "We decided to couple the most capable user personnel and the data processing personnel within one organization," Miller said. "The idea was to manage the development of a complex new system with continuous input from the

user side," he explained.

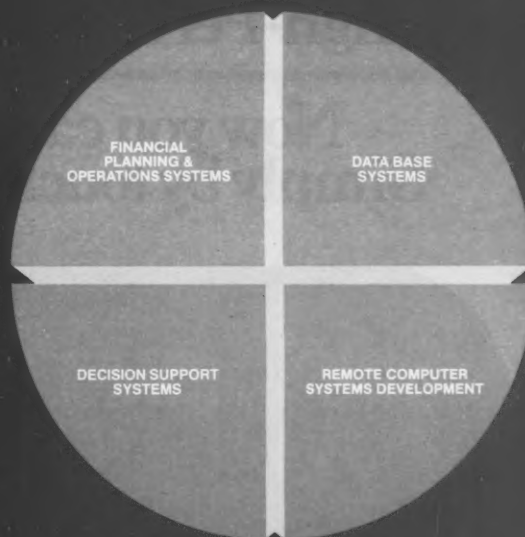
Today the in-house users serve in project planning and control advisory capacities and spend much of their time training project people to use the system. This is particularly important to those just becoming acquainted with Pmis, because of the number of options in the system.

Cobol Coding Guide Aids Standards Developers

ESTILL SPRINGS, Tenn. — A Cobol coding guide has been created by Associated Technology to help software departments formulate their own standards.

The 40-page Cobol reference tool is recommended to software managers, designers and quality assurance teams. It reportedly provides a methodology consisting of a set of company standards and examples. These features ensure the construction of top-down programs that are structured, testable and easily maintained, according to the publishers.

The guide sells for \$20 from Associated Technology, Rt. 2, Box 448, Estill Springs, Tenn. 37330.



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Sept. 5-9, Haifa, Israel — **Euromicro 82.** Contact: Euro-micro, Centre Paris-Daumesnil 4, Place Felix Eboué, F-75012 Paris, France.

Sept. 7-8, Sunnyvale, Calif. — **IMS Systems Management Workshop.** Contact: Institute for Software Engineering, 510 Oakmead Pkwy., Sunnyvale, Calif. 94086.

Sept. 8-10, Washington, D.C. — **Software Quality Assurance.** Contact: Continuing Engineering Education, George Washington University, Washington, D.C. 20052.

Sept. 8-10, Washington, D.C. — **Human Factor Issues in Computer Graphics.** Contact: Continuing Engineering Education, George Washington University, Washington, D.C. 20052.

Sept. 8-10, Mexico City — **Eighth International Conference on Very Large Data Bases.** Contact: Very Large Data Bases, P.O. Box 2245, Sacramento, Calif. 95070.

Sept. 13-14, Boulder, Colo. — **Device Independent Graphics Seminar.** Contact: Lonell Pilgrim, Precision Visuals, Inc., Suite 101, 250 Arapahoe Ave., Boulder, Colo. 80302.

Sept. 13-15, Oakbrook, Ill. — **Capacity Management Forum.** Contact: Institute for Software Engineering, 510 Oakmead Pkwy., Sunnyvale, Calif. 94086.

Sept. 13-16, Boston — **The Second Annual Conference on Control & Audit of IBM Systems.** Contact: MIS Training Institute, Inc., 12 Juniper Lane, Framingham, Mass. 01701.

Sept. 14-16, New York — **Electronic Mail.** Contact: The Yankee Group, 14th Floor, 89 Broad St., Boston, Mass. 02110.

Sept. 14-16, New York — **Data Communications Concepts Seminar.** Contact: Memorex Customer Education, San Tomas at Central Expwy., Mail Stop, 05-85 Santa Clara, Calif. 95052.

Sept. 14-16, Louisville, Ky. — **Compufest '82.** Contact: Kentucky Society of Certified Public Accountants, 310 W. Liberty St., Louisville, Ky. 40202.

Sept. 15-16, New York — **Voice Processing — The Latest Word.** Contact: Probe Research, Inc., P.O. Box 590, Morristown, N.J. 07960.

Sept. 15-17, Los Angeles — **First U.S. Trade Show in Local-Area Network.** Contact: Ellen Bond, Director of Exhibitions & Publications, Information Gatekeepers, Inc., Suite 111, 167 Corey Road, Brookline, Mass. 02146.

Sept. 16-17, Oakbrook, Ill. — **Capacity Planning & Modeling Workshop.** Contact: Institute for Software Engineering, 510 Oakmead Pkwy., Sunnyvale, Calif. 94086.

Sept. 18, Long Beach, Calif. — **Second Western Micrographics Conference and Exposition.** Contact: The Orange County Chapter of the National Micrographics Association, P.O. Box 1162, Cerritos, Calif. 90701.

Sept. 18-19, Chicago — **CICS Command-Level Intensive.** Contact: Sys-Ed, One Park Ave., New York, N.Y. 10016.

Sept. 19-22, San Antonio, Texas — **Applications Software.** Contact: University Computing Co., UCC Tower, Exchange Park, Dallas, Texas 75235.

Sept. 20-22, Santa Clara, Calif. — **Data Storage '82.** Contact: Management Cartledge & Associates, Inc., Suite 205, 4030 Moorepark Ave., San Jose, Calif. 95117.

Sept. 20-22, Miami — **Structured Testing.** Contact: University Seminars, Suite 2846, 420 Lexington Ave., New York, N.Y. 10017.

Sept. 20-22, Washington, D.C. — **Data Dictionaries.** Contact: Arnold Barnett, Barnett Data Systems, 19 Orchard Way N., Rockville, Md. 20854.

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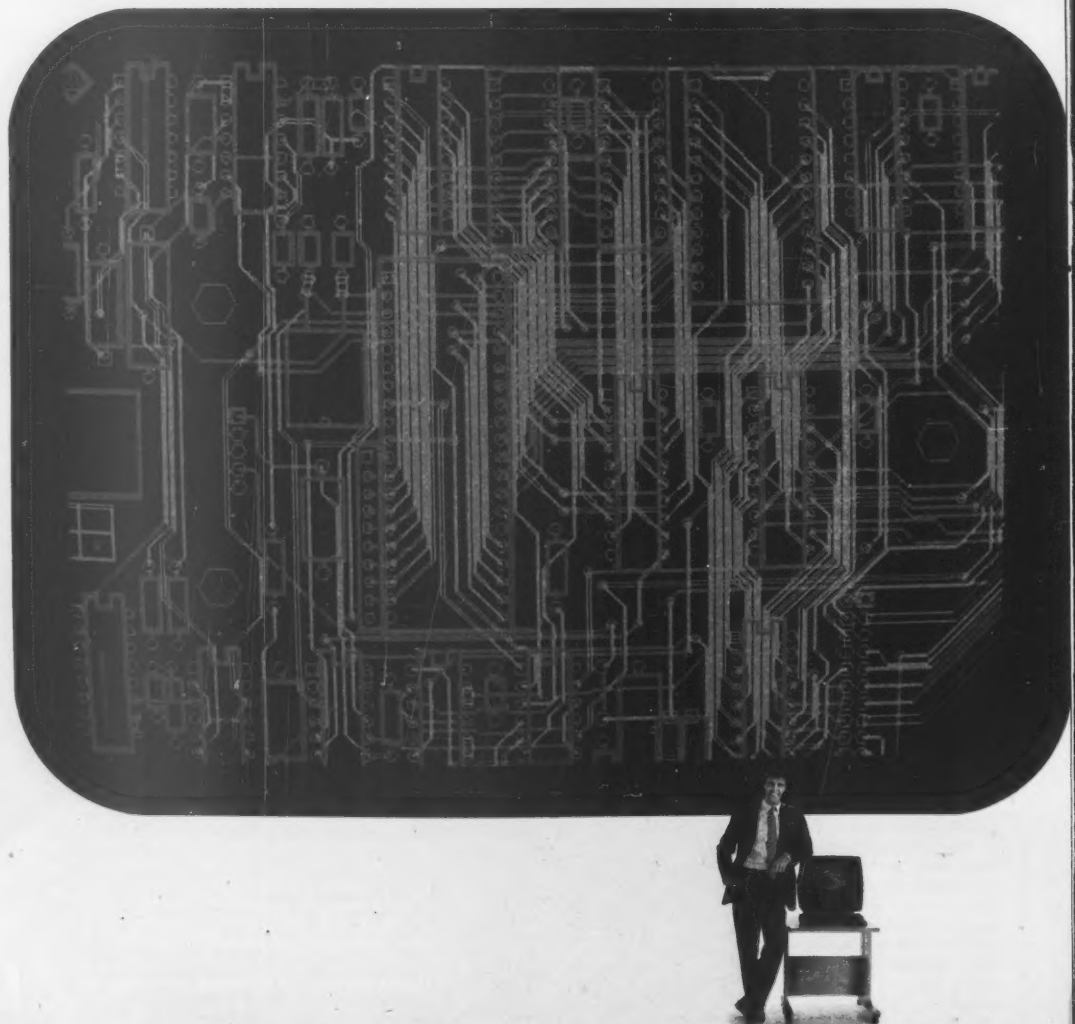
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D.C. — **Configuration Management of Software Programs.** Contact: Continuing Engineering Education, George Washington University, Washington, D.C. 20052.
 Sept. 20-23, Chicago — **Strategic Planning.** Contact: The Society for Management Information Systems, 111 E. Wacker Drive, Chicago, Ill. 60601.
 Sept. 20-24, New York — **Systems Analysis Work-**

shop. Contact: Bill Schoonmaker, BSI, 4720 Montgomery Lane, Bethesda, Md. 20814.
 Sept. 20-24, Chicago — **Command-Level Programming.** Contact: Sys-Ed, One Park Ave., New York, N.Y. 10016.
 Sept. 20-24, San Francisco — **IBM Application Development Facility Workshop.** Contact: Data Knowledge, Inc., P.O. Box 1482, San Bruno, Calif. 94066.

Sept. 20-24, Rome — **Standard Costing for Capacity Management.** Contact: Institute for Software Engineering, 50 Oakmead Pkwy., Sunnyvale, Calif. 94086.
 Sept. 20-24, Summit, N.J. — **CICS Command-Level Programming.** Contact: Advanced Training Center, 480 Morris Ave., Summit, N.J. 07901.
 Sept. 20-24, Short Hills, N.J.

— **Systems Analysis Workshop.** Contact: Advanced Training Center, 480 Morris Ave., Summit, N.J. 07901.
 Sept. 20-24, New York — **Computer Performance Measurement and Capacity Planning.** Contact: Registrar, Institute for Advanced Technology, 6003 Executive Blvd., Rockville, Md. 20852.
 Sept. 20-24, San Francisco — **System Analysis and Design Capacity Workshop.**

Contact: Registrar, Institute for Advanced Technology, 6003 Executive Blvd., Rockville, Md. 20852.
 Sept. 20-24, Washington, D.C. — **Data Base Administration and Control.** Contact: Registrar, Institute for Advanced Technology, 6003 Executive Blvd., Rockville, Md. 20852.
 Sept. 20-24, Philadelphia — **System Design Workshop.** Contact: Q.E.D. Information Sciences, Inc., Q.E.D. Plaza, P.O. Box 181, Wellesley, Mass. 02181.

Sept. 21-23, Chicago — **Software/Expo-National.** Contact: Software/Expo, Suite 400, 222 W. Adams St., Chicago, Ill. 60606.

Sept. 21-24, Boston — **Semicon/East '82.** Contact: Semiconductor Equipment and Materials Institute, Suite 212, 625 Ellis St., Mountain View, Calif. 94043.

Sept. 21-24, Houston — **Data Communications: Components, Systems and Networks.** Contact: Registrar, Institute for Advanced Technology, 6003 Executive Blvd., Rockville, Md. 20852.

Sept. 22-24, Reno, Nev. — **Structured Analysis and Design.** Contact: Registrar, Institute for Advanced Technology, 6003 Executive Blvd., Rockville, Md. 20852.

Sept. 22-24, Washington, D.C. — **Structured Testing.** Contact: Registrar, Institute for Advanced Technology, 6003 Executive Blvd., Rockville, Md. 20852.

Sept. 22-24, New York — **Automated Office VI.** Contact: National Institute for Management Research, P.O. Box 3727, Santa Monica, Calif. 90403.

Sept. 23-24, Washington, D.C. — **Data Administration: Development and Practice.** Contact: Arnold Barnett, Barnett Data Systems, 19 Orchard Way N., Rockville, Md. 20854.

Sept. 23-25, Philadelphia — **Medcomp '82.** Contact: IEEE Computer Society, Administrative Office, P.O. Box 639, Silver Spring, Md. 20901.

Sept. 27-28, Los Angeles — **Documentation for People.** Contact: 100 Kings Road, Madison, N.J. 07940.

Sept. 27-29, Boston — **DP Disaster Recovery Seminar.** Contact: EDP Security, Inc., 181 West St., Waltham, Mass. 02154.

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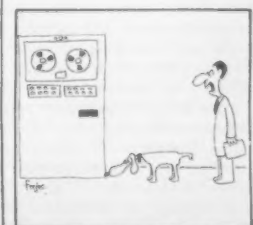
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'That's Not a Tree, Fella!'

EDITORIAL

Not Delivering the Goods

Storage Technology Corp.'s recent decision to scrap its Virtual Storage System [CW, Aug. 9] raises a question about the readiness of the product when it was announced last summer.

It also raises the issue of the responsibility that key industry vendors have to users seeking some direction in a world characterized by massive DP technological change.

When VSS was announced with much fanfare last summer, STC said the system had been under development for three years and would be installed in limited quantities during the first part of 1982, with volume shipments to begin this summer. The company touted VSS as its entry into the total systems market and made an elaborate claim that VSS was the "missing element in IBM's MVS architecture."

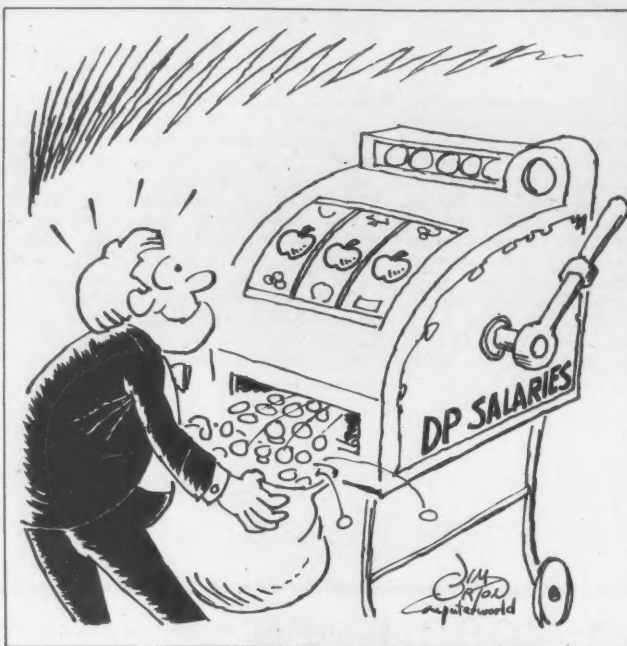
Based on this information, computer users were led to believe STC was making a major breakthrough in data management. They were also led to believe the product would be delivered.

While STC put out a lot of energy to publicize its new direction, it has been generally evasive about its decision to scrap the product at just the time it was slated for general availability. Top executives at the company were unavailable for comment. Company statements were filtered through a spokesman and were limited to references to an inability to price the system and the reliability of the back-end processor portion of the system.

This lack of information from the company leaves potential users of back-end data management systems in a quandary, wondering whether this type of system is a solution for high-volume data management problems. In general, the back-end processor concept does not appear to have received wide acceptance by users. Some discussion by the company — one of the industry's major vendors — about the market for this type of product and its usefulness for the applications intended would have provided users with some direction.

Moreover, the murkiness surrounding the decision to withdraw the product spreads a cloud over the general credibility of STC and its ability to deliver products that are out of the mainstream of its major market area — IBM-compatible peripherals.

Although STC is not the only company that has scratched products originally intended for market, it is rare for a vendor of STC's stature to announce a product and not deliver it.



LETTERS

Training vs. Experience

I am writing in response to the In-Depth article "Hiring vs. Training" by Bradley W. Nelson and James W. Lowrey Jr. [CW, July 12].

It is understandable from the biased position of the authors of this article that the statistics used and the formulas created would lead the reader to believe that it is better to train technical data processors rather than hire qualified experienced personnel. Although I agree, due to the shortage of experienced data processing personnel, it is advantageous for many medium to large size companies to train qualified applicants within their own environments.

Several important points were overlooked in this article. First, the total hours of productive time multiplied by the cost per hour of each data processor is not a true measure of productivity. My point is that a productive hour at the one-year level of experience should not be considered the equivalent of one productive hour of a data processor with, for example, four years of experience.

Even among experienced personnel the difference in productivity may be as great as 20 times. There is an even greater difference in productivity among data processing trainee-level personnel.

A better approach is to pursue a balance between experienced personnel and entry-level trainees. And when special skills are needed it is far more likely that these needs can be met by rewarding experienced personnel than by training applicants only to lose them to the competition due to the lack of proper reward systems, thus retaining the poorest producers while the search goes on for new applicants.

Another point that needs to be made in favor of experienced data processors is that they are better qualified to produce quality products

and meet the requirements of the users, thus reducing the frustration that currently exists because an inexperienced programmer was unable to meet a deadline or produce a quality product that would be useful to the company in the long run.

Gary R. Sullivan
Consultant

Ciber, Inc.
Irving, Texas

Fixed-Price Contracts

Computerworld has run many articles regarding consultants and contract services firms in the eight years I've been reading it. In each article, fixed-price contracts seem strongly recommended by the authors.

It's been my experience that fixed-price projects create "no-win" situations for client and vendor alike. You can't define the cost of one line of code, but the fixed cost of delivering a theoretical/conceptual product to the end user is virtually impossible to define.

Fixed-price contracts are deficient for three major reasons:

- The clients incur high costs to obtain extremely detailed definitions of deliverables that by their very nature are subject to revision.
- Clients bear the cost burden in revising and renegotiating the contract for each modification regardless of its significance.
- The statistical variance of cost estimates is so wide that the project comes in early with no price reduction to the client (so much for value) or the client is asked to provide over-run dollars so the vendor won't rush a quick and dirty product through to avoid losing money.

Seems to me there's a lot to be said for time and materials!

Joanne E. Peterson
Director, Eastern Services
Consultant Systems, Inc.
Toledo, Ohio

DATA PAST

Five Years Ago Aug. 15, 1977

TORONTO — The sixth triennial congress of the International Federation for Information Processing attracted about 9,000 DP professionals from all over the world.

Delegates from more than 50 countries attended the technical program, which included 100 papers, 90 sessions and 30 mini symposia and panel discussions. More than 20 international authorities on computing presented invited papers as part of the technical program.

The Congress '77 exhibition featured over 100 companies, research agencies and other DP organizations displaying their products. Congress '77 also included the Second International Medinfo Conference.

Ten Years Ago Aug. 16, 1972

WASHINGTON, D.C. — The employment picture among computer programmers and analysts appeared to be clearing up, although observers claimed it was never as bad as some people thought.

Several users faced with cutbacks the previous year were reporting a return to hiring, though not at former levels. They also did not predict a shortage of highly qualified programmers and analysts within six months.

Supporting these observations were two studies, one conducted by the government and another by a commercial firm, that suggested demand for technical people and/or engineers was on the upswing.

SOFTLINE/Werner L. Frank†

Labeling Concepts: Help or Hype?

Whether data processing needs them or not, appropriate catchwords periodically appear to enrapture the buyers of hardware and software. These terms encapsulate a concept and are used to whip up momentum to consummate new or add-on sales. The most popular ones eventually serve as keynotes or themes for the period in which they appear, and it seems that no decade is complete without one.

The '70s for the most part progressed under the banner of management information systems (MIS). Then, as the '80s loomed ahead, two completely new terms emerged, information resource management (IRM) and decision support systems (DSS).

The question is whether this type of labeling helps either vendor or user. Do we ever really understand what is meant?

History of MIS

Let's review the history of MIS. This acronym, and the phrase for which it stands, emerged in the late '60s and assumed prominence at the outset of the '70s. The term came into being as a result of DP management's interest in the exploitation of data processing.

The objective was to raise computing from the depth of the organization's operations to the overall management needs of supervisors and executives. From time to time the term was also related to the function of decision making.

MIS undoubtedly was encouraged because of the then existing file management systems and the capability they provided to generate reports for

managers. These storage and retrieval systems became the primary vehicle for putting MIS into practice.

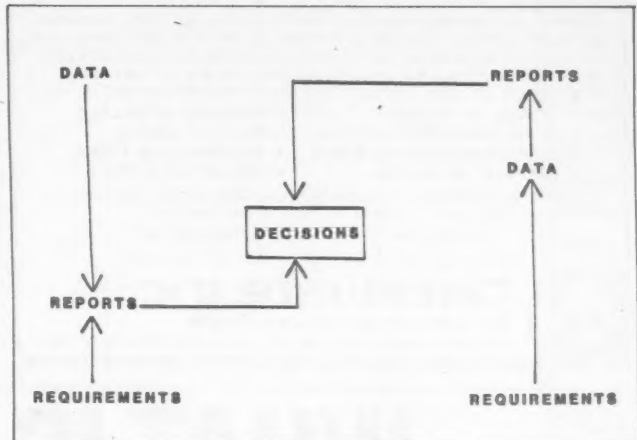
Of course, MIS was more than this. The term began to be used to refer to the whole top-to-bottom spectrum of computing as well as the DP organization. In fact, the computer operation itself often became known as the MIS department and its head as the vice-president for MIS.

Further, a new professional organization emerged, the Society for Management Information Systems. Finally, the words sought to emphasize the systems aspects of computing, including the problems of paper flow, data entry processes and data output dissemination.

What results have MIS wrought? Through the society, we have a strong management-oriented group concerned with the application of computers in large organizations. We have created an appropriate title, making it more sophisticated than vice-president/DP, by lifting the position an apparent notch through its association with the term "management."

We have elevated the use of computers in organizations and have caused top management to be more sensitive and appreciative toward data processing's power and contribution.

But I know of no tangible result, in either hardware or software. It might be argued that the data base management system maturation was a result of MIS, but I really believe it was the other way around. Continued improvements in report generators and nonprocedural query systems provided tools that could then be ex-



Management's DP Focus

ploited by managers who were seeking information.

The MIS label still exists today, but the glamour is gone. We no longer hold conferences devoted to the subject. The content, if there ever was any, is exhausted.

Two New Contenders

The decline of MIS provides an opening for a new acronym, and for this there are two contenders, IRM and DSS. To displace the previous favorite and establish these new terms, one can now find quotations in current literature like the following: "Broken promises and disappointing mistakes... marked the last decade's buzzword, MIS." Or, "MIS was inadequate and failed... but business executives learned many lessons from

the short-lived MIS boom."

MIS has even been depicted as a myth, nothing more than the process of generating reports.

Who are these new kids on the block? First we'll look at DSS and note a few definitions gleaned from the press:

1. A concept that advances improved quality of executive decision making through user-friendly computer systems.
2. A data processing environment in which the executive can more readily examine and evaluate alternative strategies and options in decision-making situations.
3. Computerized techniques for increasing the productivity of managerial and professional decision making.

(Continued on Page 38)

HUMAN CONNECTION/ Jack Stone†

Technical Tasks for the Data Center Manager

Everybody in this business agrees that systems development management slots are "technical" positions and, to be effective, incumbents must be, to use the well-worn expression, "technically competent."

However, there is no widespread agreement on what all this means or even what technical chores these managers should be performing.

Stephen Roberts, as part of his effort to improve operations in his administrative systems development group at the Catholic University of America data center, was very clear on his system's responsibilities:

Conceptual Development

"My major technical job is to lead the conceptual development of new systems. This involves a number of tasks. First, I meet with the senior members of the user department and review the general thrust of the development effort.

"Then, I deliberate over design alternatives and come up with one that I believe best meets the goals for doing the job efficiently within prescribed resource levels.

"But there are additional criteria re-

This is Part 16 of a continuing series on how to succeed as a data center manager.

lating to *practicality* that must be met by a systems solution: reliability, operability and maintainability.

"Let me comment on our approach to reliability. We are not obsessed with the notion that we must absolutely keep up with every advance in state-of-the-art technology because 'newness' too often implies operating uncertainty. We are sensitive to industry developments, but unless the user truly benefits overall, new technology will not be employed at our center until it is proven by the experience of others.

"The point is this: Our administrative departments have the mission to run a business and not do research. They already have plenty to keep them busy, so why should they have to worry about the reliability of their computer systems?

"Now, then, once the concept is formed, I call in a senior analyst and sketch it out on the board. We cover

objectives initially and follow with basic system decisions on file structures, on-line vs. batch processing and so forth.

"For the next step, the analyst takes the ideas and refines them, 'fleshing the system out' to the point where he has the system designed and documented in the form of a detailed specification.

"Then, we take the design to the user management and argue over it, point by point. We usually send over some documentation beforehand, but for major systems, we like to have a face-to-face meeting to resolve conflicting views on design strategy.

"Programmers pick up the job at this point and complete the system, uncovering 'logic holes,' inconsistencies and other discrepancies along the way. I fully expect them to come up with some and, if they don't, I will conclude that the programmers don't fully understand the concept.

"But system failures early on taught us that the systems design job cannot stop with program design. We found out that we absolutely must look at a

user department as a *whole* and determine how a new automated function can fit in its operating environment.

"We therefore study user information flows, manual systems and organizational structures.

"We look hard at the capabilities of the user's staff and design computer interfaces to their operating levels. We examine interdepartmental data flows for redundancies and checks and balances.

"Finally, when we see the need for user department reorganization or other changes, we strongly recommend them to the users and lobby hard to win the cause.

"I recognize that when we push for shifts in the user's operations, we are risking our jobs if our ideas fail. However, we must have been right most of the time because, nowadays, university management frequently comes to us for consultation on organization and operation of the university administrative departments. "The acceptance of our competencies as internal organization consultants by top management is, perhaps, the ultimate measure of DP center success."

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Catchwords: Help or Hype?

(Continued from Page 37)

ing.

How do proponents of DSS view the alternatives for putting these ideas into practice? They recommend the use of data management systems, planning and forecasting systems and graphical output techniques. They emphasize the use of ad hoc data integration schemes and easy-to-use query systems. They argue for powerful "what if" model builders. So what is new?

When we examine IRM, we find a dichotomy of meaning. Compare these definitions:

1 Information resource management is the management of information as a resource.

2 Information resource management is the management of resources

required to provide information.

That is quite a difference. Most of IRM is used in the first sense. It is here that battle lines have already been drawn between those who see IRM as nothing more than a new label for a defunct MIS and those who emphasize the concept of data as a corporate resource. Indeed, this first view of IRM supports the further meaning of providing guidelines, standards and conventions for information handling.

From such thinking there emerges the need for establishing the IRM function in an organization in order to fulfill the purpose already invented for the data base administrator.

If IRM really just amounts to maintaining data integrity, and the relevance and effectiveness for creating information, then how does it differ from the aspirations of MIS?

Turning to the second meaning, we have a horse of a different color. This use of the term "IRM" has to do with the total scope and organization of the extended data processing function, which includes voice and data communications, word processing and other administrative functions.

While this meaning may serve to better the exploitation of overall corporate resources, it is hardly a methodology or procedure that directly affects the computing process.

There is, however, at least one redeeming value in the shift of terminology as we go from the '70s to the '80s. As the chart shows (See Page 37), the central focus of management use of data processing has been on decision making.

Until recently, however, the manager's information requirements were limited for the most part to the predetermined reports that could be routinely extracted from the data existing in corporate files. As shown on the left side of the chart, the decision-making process used such information directly and empirically.

In contrast, the more current mode of operation seeks to impose the manager's requirements for information on data sources, wherever they may be, and extract appropriate information from many sources in order to generate the necessary data and integrate it into a report. From this output the decision may be derived. This process is characterized by data synthesis and analytical composition and is depicted on the right side of the chart.

The first of these approaches can indeed be described as a management information system, whereas the second is a decision support system.

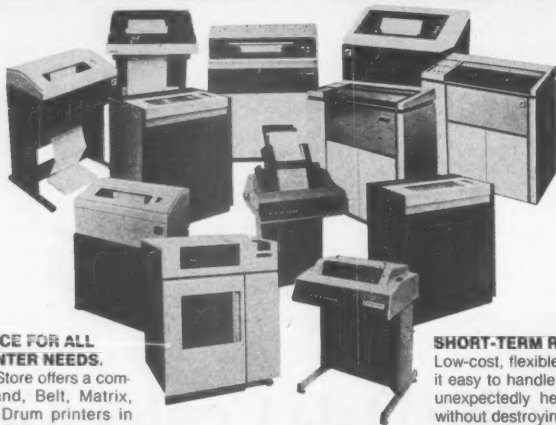
Now that I have stuck my neck out this far regarding MIS, IRM and DSS, let's go one step further.

Are terms such as these invented in the hope of inspiring technology or do they respond to technology? Or are they pure hype?

With respect to IRM and DSS, we have two contemporary contenders looking for simultaneous recognition. Since each of these terms seems to have its own commercial sponsors, are they private labels or do they really have intrinsic value that can help to enhance the industry and serve the public?

Frank is executive vice-president of Informatics General Corp. in Woodland Hills, Calif.

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Analyst Offers Suggestions Ethical DP Behavior Requires Action Plan

By Donn B. Parker

Special to CW†

To encourage ethical behavior among its programmers and other DP personnel, an organization should formulate a comprehensive action plan. The 10 action items discussed below form a sound basis for such a plan.

1. Formulate a code of conduct. Every organization that relies on computers needs a written code of data processing conduct. A code of conduct should establish rules that apply ethical principles to DP activities to reduce the possibility of ethical conflicts.

2. Establish rules of procedure. Setting

This is an excerpt from an article entitled "Ethics for Computer Personnel," which Parker authored for Auerbach Publishers, Inc.'s Computer Programming Management series.

Parker is a senior information management consultant with SRI International, Inc. in Menlo Park, Calif.

rules of procedure can also minimize the conflicts in ethical decision making. Explicit procedural rules should cover at

least the following:

- Personal use of computer services.
- Proprietary rights to computer programs.
- Proprietary rights to data.
- Confidentiality of passwords.
- Physical access to restricted areas.
- Handling of visitors and on-site vendor personnel.
- Use of terminals.
- Personal use of computer storage media and supplies.

3. Establish sanctions. Rules are ineffective if penalties are not imposed on violators. Sanctions include oral or written public or private reprimands. The explicit threat to apply any sanction must be followed by punishment within the constraints of fairness and due process.

4. Recognize ethical behavior in job performance. Performance and compensation reviews should include specific items concerning ethical behavior and adherence to and support of procedure rules. Failure to meet ethical standards should result in a

(Continued on Page 42)

Software AG Introduces Link Between Adabas, MSA Users

RESTON, Va. — Software AG of North America, Inc. has announced the development of a direct and transparent software link between its Adabas data base management system and the batch and IBM CICS on-line options of Management Science America, Inc.'s (MSA) financial software packages.

Developed with the cooperation of MSA, the Adabas/MSA Capabilities reportedly offer the joint Adabas and MSA user communities the means to centralize and manage their corporate data using Adabas, while running general ledger, human resources, accounts payable and accounts receivable applications using MSA software.

The Adabas/MSA Capabilities are said to be operating-system independent and to run on IBM and plug-compatible mainframes. The Adabas file definitions allow use of ad hoc query and report facilities with these MSA systems using Natural, Software AG's on-line development language, the vendor explained.

Capabilities for the MSA general ledger and human resource systems will be available in August. Capabilities for accounts receivable and accounts payable will follow.

The Adabas/MSA Capabilities for these MSA systems will be marketed and supported by Software AG. The price for the first purchase is \$20,000, with subsequent purchases costing \$10,000 if made within

one year, according to Software AG, located at 11800 Sunrise Valley Drive, Reston, Va. 22091.

ADR 'Roscoe' Release Enhanced, Expands 'Librarian' Source Code

PRINCETON, N.J. — Release 5.2 of Roscoe, Applied Data Research, Inc.'s (ADR) on-line programming product for IBM and plug-compatible mainframes running under OS/VS, reportedly now allows users to direct this software to expand source code from the firm's Librarian package during a job submission.

A new command is said to direct Roscoe to search for statements that point to modules in Librarian's master file that are to be expanded.

Release 5.2 of Roscoe allows the ADR/ETC word processing system to operate under Roscoe in both Btam and Vtam environments, the vendor said. Full ADR/ETC printing support is said to be available through Roscoe Printing Services, an asynchronous printing subsystem for scheduling and monitoring user-initiated print requests to local and remote printers.

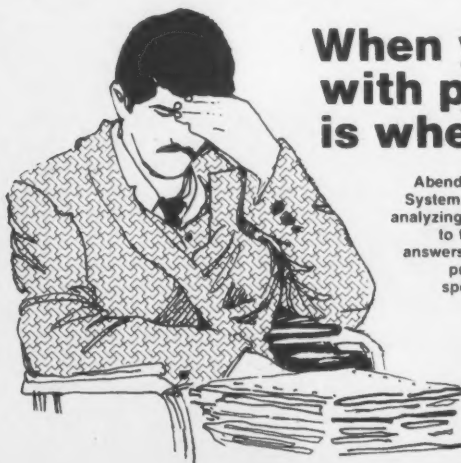
Terminals connected to ADR's Datacom/DC or IBM's CICS now can access Roscoe through IBM 3270 terminals, the vendor

noted. This was designed to support Vtam-like operations for Roscoe sites with Btam and ADR's Datacom/DC or IBM's CICS.

A new series of exit points in Release 5.2 of Roscoe are intended to allow security checking at each place where processing decisions can be made. In addition, a common data set exit is called each time Roscoe accesses an IBM OS data set, according to the vendor. A special set of exit routines supports IBM's Resource Access Control Facility and other security systems.

The new release of Roscoe includes a tutorial system for training new users, as well as a common library for often-used Roscoe programs, a search by catalog index levels for data sets and a new master index manual that references all system documentation, the vendor said.

The permanent license price for Roscoe is \$43,000 for MVS sites and \$37,000 for non-MVS sites. ADR is located at Rt. 206 and Orchard Road, CN-8, Princeton, N.J. 08540.



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CW 7



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Action Plan Suggested for Ethical DP Behavior

(Continued from Page 39)
financial or advancement penalty, while exemplary ethical conduct should be rewarded.

5. Focus attention on ethics. This can be done through briefings, training courses and required reading. One effective means of holding ethics briefings is to present scenarios involving conflict-of-ethics situations.

6. Promote computer crime laws. Currently, only 12 states have computer crime laws. Other states have computer crime bills pending, while the Congress is rather slow in adopting such legislation. Organizations that rely on computers should support the enactment of computer crime legislation and make their employees aware of all new statutes.

IBM Series/1, PE Minis Get Client Aid

ENGLEWOOD, Colo. — Gemini Information Systems, Inc. has introduced CPaid, a client write-up software package designed for users of the IBM Series/1 and 32-bit Perkin-Elmer Corp. minicomputers.

According to a Gemini spokesman, CPaid consists of general ledger, client time and billing, prior-year history, after-the-fact payroll and reporting and check reconciliation functions. It operates with Gemini's DDQuery-correct Data Base Management and Query System and can accommodate any number of clients, the spokesman said.

The query system allows multiple users interactively to enter, retrieve, modify and report data using more than 40 English-like commands.

The license fee for CPaid/DDQuery is \$33,000.

More information is available from Gemini Information Systems, 5500 S. Syracuse Circle, Englewood, Colo. 80111.

7. Impose accountability and minimize the temptation to act unethically. It is good management practice to avoid placing employees in such high positions of trust that the temptation to violate that trust is unreasonably high or beyond an individual's capacity to resist.

8. Encourage the use of rehabilitation programs. Employees may have personal problems that sometimes

lead them to behave unethically. These people often benefit from a rehabilitation program that deals with such problems as drugs, alcohol, gambling and family abuse and provides confidential financial advisory services.

9. Encourage participation in professional societies. Such professional and scientific societies as the Institute of Electrical and Electronics Engineers Computer Society,

the Association for Computing Machinery, the EDP Auditors Association and the Data Processing Management Association are actively engaged in developing codes of ethics and sanctioning procedures. Employees should be encouraged to join and participate in such societies by posting society activities and allotting employees time from work as well as travel expenses to participate

in society conferences.

10. Set an example. Subordinates and managers tend to follow the lead of their superiors in ethical conduct. Ethical practices, therefore, must start at the top and be visible down through the organization. Such practices should be guided by policies established and followed by top management. Codes and rules then can be derived from policies.

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'Facets' Update Offers 'Relational Generator'

NORWALK, Conn. — TSI International, a division of National CSS, Inc., has made its logical data base design tool, the Relational Generator, available to IBM OS and VM users with Release 1.1 of Facets.

The Relational Generator is an automated tool used to generate a logical data base design from the requirements definitions stored in Facets' base dictionary. Facets reportedly provides a data model to support strategic planning and requirements definition.

The Relational Generator is priced separately at \$12,500, and the entire Facets system costs \$15,000. TSI is located at 50 Washington St., Norwalk, Conn. 06854.

Passthrough Option Allows TSO, 'Wylbur' Combination

SAN FRANCISCO — On-Line Business Systems, Inc. (OBS) has announced a Session Passthrough Option (SPO) intended to enable users of IBM and plug-compatible systems to combine the best features of IBM's TSO and OBS's own Wylbur text-editing and job management software.

SPO was designed to allow

users in a Wylbur session to conduct one or more additional sessions with other IBM Advanced Communications Function (ACF) Vtam applications simultaneously.

The vendor said that all existing Vtam applications, which support IBM 3270 terminals, can be handled like Wylbur subsystems and are available from within the

same session environment without repeated LOGOFF and LOGON cycles.

Depending upon the application, this is said to include the ability both to intermix and to issue commands to the various applications using Wylbur Execs or Program Function Key definitions.

SPO reportedly supports communications from Wylbur sessions on IBM 3270 terminals to any ACF Vtam application that supports Systems Network Architecture 3270 display devices. Cross-domain sessions are said to be supported so users can be active with multiple applications on more than one host from within the same session. The vendor said this allows Wylbur users access to IBM's TSO for foreground execution and interactive test facilities.

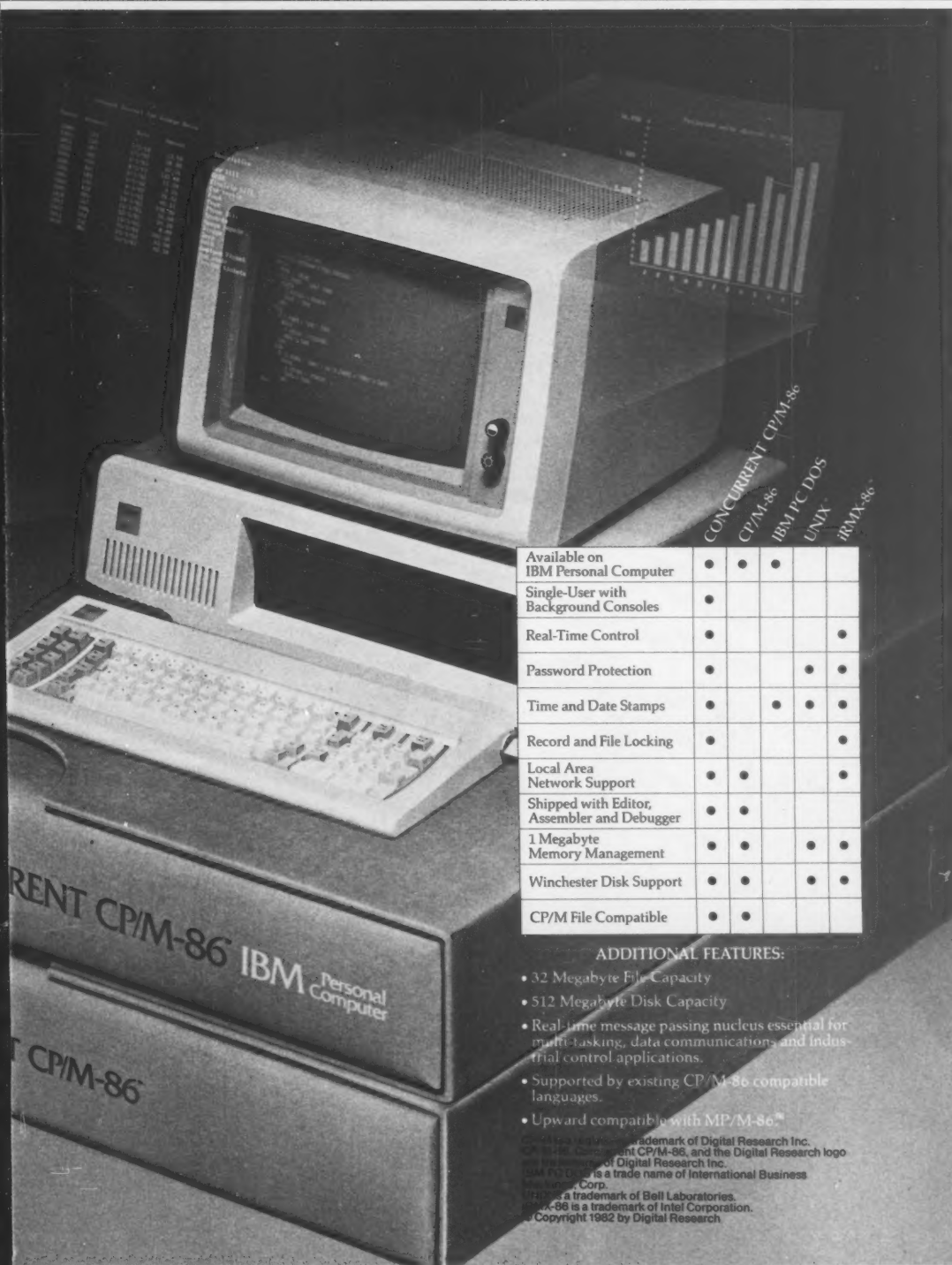
The SPO utility has an introductory price of \$8,500, according to OBS, which is located on the 4th Floor, 115 Sansome St., San Francisco, Calif. 94104.

Pharmacy System Out for Series/1

PORT CHESTER, N.Y. — IBM has announced an Event-Driven Executive Chain Pharmacy System for its Series/1 line of processors.

The field-developed program runs under the EDX operating system. Features include prescription processing, maintenance of patient records, multistore processing and third-party processing, the vendor said.

The package costs \$2,200 from 900 King St., Port Chester, N.Y. 10573.



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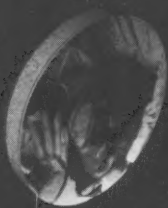
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Evaluator Provides Means For Standardized JCL

NEW YORK — An automated tool for JCL procedure evaluation and standards enforcement has been introduced here by The Productivity Group, Inc. It reportedly runs on IBM and plug-compatible systems under OS.

JCLegislator reportedly ensures that all production programs and systems have procedures that adhere to standards; provides a mechanism for producing consistent JCL that is

self-documenting and maintainable; reduces production maintenance, disk space use and operator intervention; provides system development and maintenance personnel with an early JCL review; serves as a tool for automatically building generation data groups; and increases acceptance of a quality-assurance program, according to the vendor.

The basic JCLegislator can be leased in source form for three years at \$3,500/CPU, \$1,500 for one year or monthly at \$180.

The Productivity Group, Inc. is based in Suite 32-S, 305 W. 98th St., New York, N.Y. 10025.

DOS/VS Users Get 'Topdoc'

LOS ANGELES — DP Software Exchange, Inc. (DPSE) has introduced Topdoc, the Operation Documentation System for users of IBM DOS/VS and DOS/VSE systems.

This product was designed for operations departments in all industry areas. It reportedly provides a production job turnover procedure for the programming staff. Once the user has entered the job information, Topdoc can produce job setup instructions, operator-run instructions, report breakdown/distribution instructions, report transmittal forms, master systems lists showing all jobs in the system and cross-referenced reports, the vendor said.

Topdoc leases for \$195/mo and DPSE is located at Suite 105, 8737 Venice Blvd., Los Angeles, Calif. 90034.

Menus Featured With 'Secure/34'

ST. PETERSBURG, Fla. — B & B Software has introduced a menu security package for the IBM System/34 designed to tailor user security by menu item.

Through an on-line menu selection routine, users can be restricted from or authorized to perform selected jobs, a vendor spokesman said. The one-time license fee for Secure/34 is \$195 and the package comes with a 30-day guarantee.

A demonstration copy may be obtained by mailing a blank diskette to B & B Software, Office Software Department, P.O. Box 21288, St. Petersburg, Fla. 33742.

Financial Planning Tool Helps Develop Projections, Alternatives

RYE, N.Y. — A system designed to help businesses develop financial projections and analyze planning alternatives has been announced here by IBM.

The System/34 Financial Planning and Modeling System can be used for forecasting and strategic planning, according to the vendor. It automatically produces reports on a projected balance sheet, income statement,

SANTA CLARA, Calif. — Memorex Corp. has introduced a software package designed to control computer output printing at local and remote sites.

The Distributed Printing System (DPS) reportedly runs as a Vtam ap-

JOL Update Aids OS Job Streams

SACRAMENTO, Calif. — Software Module Marketing, Inc. (SMM) has announced Version 3.3P of its Job Organization Language (JOL), which was designed for users of IBM and plug-compatible mainframes running under OS.

This release features Buildjob, which reportedly enables computer users to create error-free executable IBM OS job streams automatically by answering questions and eliminating the need for specialized knowledge of JCL, the vendor said.

In addition, JOL can be used as a conversion aid for IBM DOS to OS conversions, according to SMM.

The VS/1 version of JOL 3.3P costs \$50,000 for one CPU and \$60,000 for the MVS version with one CPU.

SMM is located in the Crocker Bank Building, Penthouse, 1007 Seventh St., Sacramento, Calif. 95814.

Two Modules Added to 'MDS'

BROWN DEER, Wis. — Two additional modules for A.O. Smith Corp.'s Manufacturing Data System (MDS) have been announced here.

The additions are the job costing function, which was designed to collect actual costs by shop order and prepare reports of cost variances for analysis, and the inventory accounting system, which supports the processing and evaluation of both full physical inventory as well as ongoing cycle-counting programs.

Other modules available with MDS are engineering data control, customer order servicing, master production scheduling, manufacturing activity planning and purchasing.

MDS runs on large-scale IBM and plug-compatible mainframes with the MVS operating system, the vendor said. The entire MDS package with all 13 modules costs \$300,000. Modules are available separately for between \$5,000 and \$15,000 each, according to the vendor at 8901 N. Kildeer Court, Brown Deer, Wis. 53209.

plication and can be used by anyone familiar with the structure of IBM JES commands. It is said to provide control to the remote printer user, while facilitating control of the printer network from the central site.

DPS also features control of the printer network through commands issued from operator consoles and IBM TSO terminals, the vendor said. Reports can be queued from TSO terminals, IBM's JES2 operating environment and from user-written programs.

The product sells for \$10,000, from Memorex located at San Tomas at Central Expressway, Santa Clara, Calif. 95052.

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'Magec' Adds Support For CICS, Datacom/DC

CARROLLTON, Texas — ALA, Inc. has announced Release 1.0 of its Magec applications generation software for on-line applications.

This product runs on IBM and plug-compatible mainframes and supports IBM's CICS and Applied Data Research, Inc.'s (ADR) Datacom/DC along with various other teleprocessing monitors. It also supports Vsam and ADR's Datacom/DB data base management system, the vendor said.

Magec is said to produce Cobol inquiry, update and browse functions from non-procedural specifications

that are stored in its dictionary. Generated applications can reportedly be customized or used as they are. Magec's dictionary-controlled security system governs all on-line access, the vendor said.

An automatic documentation generator is included with Magec's On-Line Masking Facility, which is said to capture screen format specifications from the developer's drawings of screen images at a CRT.

Magec is base-priced at \$18,000, the vendor said from 1029 Oxfordshire, Carrollton, Texas 75006.

Manufacturing Package Offers On-Line Processing

GREENBELT, Md. — Martin Marietta Corp.'s Data Systems Division has announced that its manufacturing control software system is now available in an on-line interactive and

Medical Package Fits System/23

PINE BLUFF, Ark. — Nolan Data Services, Inc. has announced a medical accounts receivable package for IBM's System/23 Datamaster.

The package features user-friendly operation and is geared to individual practices as well as clinics.

The package costs \$4,000, including documentation. Nolan can be reached at P.O. Box 8912, Pine Bluff, Ariz. 71611.

real-time mode as well as in batch.

MAS II is a modular system that reportedly provides a total manufacturing management strategy for master production scheduling; inventory, manufacturing, cost and engineering controls; and purchasing.

It is a closed-loop system when all six modules are used, according to the vendor.

The product runs on IBM mainframes (4341 and larger) and is intended for users of IBM's IMS DB/DC (data base/data communications) systems. Base-priced at \$60,000, its cost varies depending upon the configuration, the vendor said from 6303 Ivy Lane, Greenbelt, Md. 20770.

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Self Help Command Mode	Yes	No	Allow simple, one-step connection to network and data bases; store user-friendly prompts or daily field information for later, cost-effective transmission; battery back-up memory preserves data even when power is off.
Built in 300/1200 acoustic coupler	Yes	Yes	Start-up Manual is built in. Step-by-step prompting permits terminal configuration for individual applications.
RJ-11 telephone jack option	Yes	No	Cuts telecommunications costs; flexible access to any data base, from any telephone.
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Lampi Brings Out CICS Utility

MINNEAPOLIS — A software utility designed to initiate a number of IBM CICS functions from any batch data partition has been unveiled here by J.W. Lampi, Inc.

The Inter-Partition Command Processor (IPCP) runs on IBM mainframes and plug-compatibles under DOS/VS(E) with CICS. It is intended to eliminate the problems inherent in sharing resources among partitions and to serve as a testing tool for on-line development, according to the vendor.

ICPC will reportedly facilitate opening and closing CICS files, extra-partition data sets and the CICS dump data set. Other functions supported by ICPC include writing data destinations, initiating transactions, switching dump data sets and interfacing to user-written programs, the vendor said.

The perpetual license for this package costs \$950 from J.W. Lampi at 6160 Benjamin St. N.W., Minneapolis, Minn. 55432.

'Compass' Series Goes On-Line

LIONVILLE, Pa. — Carta Associates, Inc. has announced an on-line version of its Compass Series General Ledger system.

Compass Online is said to give the accounting user closer system control, increased productivity and faster responses in the data entry and query functions, data edit and validation and accounting administration and operations.

The software operates on terminals that are IBM 3270-compatible and operates on IBM and plug-compatible systems running under VM/CMS, DOS and OS, with CICS and Vsam, the vendor said. Compass Online costs \$10,000 from 325 Gordon Drive, Lionville, Pa. 19353.

'Phonetic Search' Fits System/38

SAN DIEGO — Integrated Systems Management, Inc. has introduced its ISM Phonetic Search System for the IBM System/38. It is said to allow a user to key in a name and to have the system display all names in a file that phonetically sound like the name entered.

The package allows location data in files when using only a name as a search argument such as a search for a customer record when an account number is unknown, according to a spokesman.

The search can be further restricted by the use of delimiter fields, which can be user-defined. Misspelled, duplicate or incorrectly entered data can be identified and corrected, the vendor said.

The package is written in RPG III for the System/38. All data files are externally defined and source programs are provided.

The package is available for a \$1,150 license fee from ISM, Suite 344, 2515 Camino Del Rio S., San Diego, Calif. 92108.

Runs on IBM 4300, 30 Series

'Promotional Profiles' Package Enhanced

ATLANTA — American Software, Inc. has introduced an enhancement to its sales forecasting Promotional Profiles software package that runs on the IBM 4300 and IBM 30 series of mainframes.

The enhancement will allow promotion and price changes that cause major shifts in customer demand statistics, the vendor said. The system allows the user to analyze the effects of past strategic actions.

Other features include multiple promotions that may be applied to a product cumulatively or separately, promotions that may be applied to the basic product or a special promotion product and the ability to track against the given promotion objec-

tive.

The enhancement is available for \$19,000.

American Software is headquartered at 443 E. Paces Ferry Road, Atlanta, Ga. 30305.

'Jims' Upgraded for IBM Systems

ALAMEDA, Calif. — Maxima Systems Group has announced enhancements to its Job Initiation Management Scheduler (Jims) for IBM and plug-compatible systems.

In addition to its current interface to Pansophic Systems, Inc.'s Panvalet software, users can now interface to The Librarian from Applied Data Research, Inc. through the use of the Panvalet

exit, a spokesman explained. This reportedly allows JCL files to be maintained on private libraries of Panvalet or The Librarian.

Jims also now provides a generalized exit routine said to permit users to pass code to and from monitors and applications programs. It costs \$8,500 for a perpetual license. Maxima is at 406 Westline Drive, Alameda, Calif. 94501.

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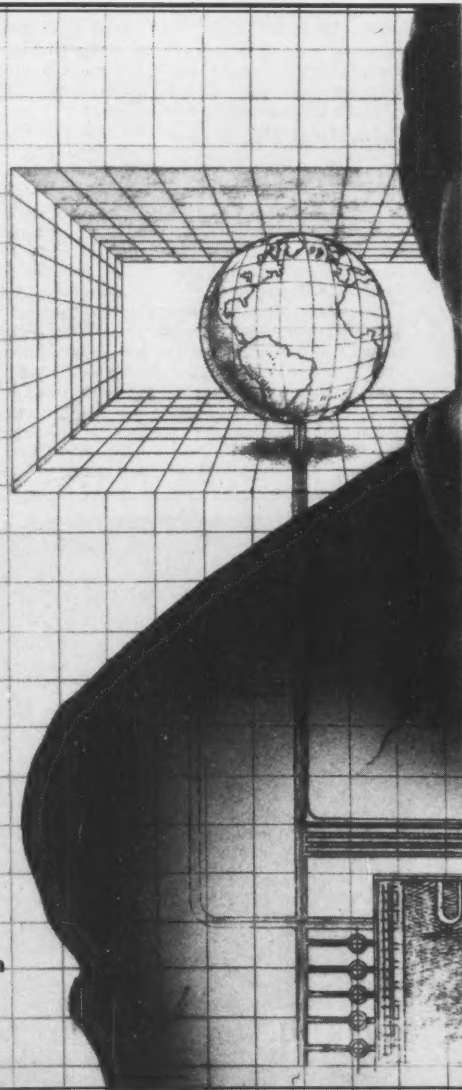
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Problem-Solving Packages Designed for DEC's VAX-11

HOUSTON — IMSL, Inc. has announced two problem-solving software packages for use on the Digital Equipment Corp. VAX-11 series of computers.

Math/Protran and Stat/Protran are reportedly compatible with DEC's VAX-11 Fortran compiler and VMS operating system. Math/Protran performs elementary operations and random number generation, interpolation and data smoothing, integration and differentiation, differential equations, linear and nonlinear algebraic equations, eigenvalues and eigenvectors, optimization and transforms and sorting, according to

the vendor.

Stat/Protran reportedly assists in problem-solving areas such as basic statistics, frequency tables and cross-tabulations, correlation, regression analysis, analysis of variance and random number generation.

The annual subscription rates for the DEC VAX-11 series are \$3,000 for Math/Protran for the first year and \$2,000 for renewals. Stat/Protran costs \$2,500 for the first year and \$1,500 for renewals, the vendor said. IMSL is located on the Sixth Floor, NBC Building, 7500 Bellaire Blvd., Houston, Texas 77036.

Xerox Enhances Payroll Package

LOS ANGELES — The Xerox Computer Services Division of Xerox Corp. has added a tax-change test feature to its Praxa payroll software.

Running on Digital Equipment Corp. PDP-11 and VAX-11 computers, Praxa is said to handle all federal, state and local tax requirements. Tax computations are performed by the use of master tables for each taxing authority.

The tax-change test feature reportedly enables the user to verify the accuracy of tax table file maintenance procedures.

Praxa carries a one-time license fee of \$12,000, a spokeswoman said from 5310 Beethoven St., Los Angeles, Calif. 90066.

KMK's 'Tax-11' Fits PDP-11 Using CTS

PLAINVIEW, Texas — KMK Enterprises, Inc. has introduced a tax assessment and collection package that it said runs on any Digital Equipment Corp. PDP-11 minicomputer using the CTS-300 or CTS-500 operating systems.

Tax-11 is an interactive and comprehensive package designed for a variety of taxing authorities, a vendor spokesman said. Its capabilities include parameter-driven statements, tax roll and monthly report generators that allow the printing of any statement, tax roll or monthly report format.

Tax-11 also allows multiple tax authority use of a single data base while maintaining a separate exemption file for each tax authority, data base for both master taxpayer information and taxpayer exemption information and separate tax rate and discount/penalty rate files for each tax authority.

The package is available for \$10,000 from KMK Enterprises, Compu-Data Services, 302 W. 8th St., Plainview, Texas 79072.

VAX-11 Gets Financial Tool

CAMBRIDGE, Mass. — Financial software for Digital Equipment Corp.'s VAX-11 superminicomputers running under the VMS operating system has been introduced here by Oasys, Inc. The Applications Development Environment (Aide) software handles standard DP functions — accounts payable, receivables and general ledger — as well as what Oasys calls "office context processing," incorporating such terms as forms, folders, desks, filing cabinets and so on.

Aide is menu driven, and Business, its procedural language, is reportedly similar to Cobol. The VAX/VMS version of Aide is currently only available bundled with one to four Ruben Engineering Corp. Assistant terminals. The price ranges from \$22,000 to \$30,000, Oasys said from 60 Aberdeen Ave., Cambridge, Mass. 02138.

'AR-20' Version 2 Fits Decsystem

TUCSON, Ariz. — Timesharing Consultants, Inc. has announced a new release of its Accounts Receivable system for the Digital Equipment Corp. Decsystem-20.

Version 2 of AR-20 features standardized data collection, inquiry and control; open item and balance forward processing; automatic interface to other systems; and flexible cash receipt processing, statement preparation and reporting, according to the vendor.

The software costs \$20,000, according to Timesharing.

Timesharing Consultants is based in Suite C300, 6420 E. Broadway, Tucson, Ariz. 85710.

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Univac Offers System 80 Aid, Three Options for 'Sufics 1100'

BLUE BELL, Pa. — Sperry Univac has introduced a financial planning package for its System 80 computers and three additional options for use with its Sperry Univac Financial Integrated Control System 1100 (Sufics 1100) decision support system on its System 1100.

The Sufics 80 was designed for budgeting, cash-flow forecasting, capital investment analysis, long-term and strategic planning, market planning, product launching and planning and corporate modeling on Univac's System 80 with a minimum of 300K bytes of main memory, the vendor said. It also reportedly performs inflation evaluation, merger and acqui-

sition evaluation, cost estimating, product profitability analysis, consolidations and statistical analysis and forecasting.

This product can be ordered by individual module and is scheduled for release in the fourth quarter of 1982, with a base lease price of \$575/mo.

The three new options for use with the Sufics 1100 are Financial Graphics, Enhanced Basic and Re-Entrancy (common banking), according to the vendor. Each of the three, which will also be available in the fourth quarter, can be licensed for \$900/mo each.

Univac can be reached through P.O. Box 500, Blue Bell, Pa. 19424.

Two Accounting Packages Fit DG Commercial Systems Line

SKOKIE, Ill. — Data Directions, Inc. (DDI) has introduced two accounting packages designed to run on all systems of the Data General Corp. Commercial Systems Line. Both the Time and Billing and the Fixed Asset Accounting packages operate in multi-firm, multiuser environments.

The Time and Billing package reportedly includes unlimited retention of detail, multiple billing rate, separate accounting and billing of special jobs or matter, alternate client billing structures, user-formatted

statements and a complete balance forward of open-item accounts receivable subsystems.

The Fixed Asset Accounting package can track any asset for financial books, a vendor spokesman said. Reports include a five-year depreciation forecast, bonus or expense, investment tax audit and recapture and tax schedules.

The Time and Billing package costs \$2,500 and the Fixed Asset package costs \$1,500 from DDI, Suite 12, 5225 Old Orchard Road, Skokie, Ill. 60077.

Honeywell Marketing System Targets Communications Field

WALTHAM, Mass. — Honeywell, Inc. has introduced an on-line marketing information system for the communications industry. It will run on the Honeywell DPS 8/20 or larger mainframe.

The Strategic Account Management and Planning On-Line (Sampol) package was designed to help meet

the needs of marketing and sales departments of large communications companies and other firms with over 100,000 customers and prospects.

A Sampol data base includes the information elements common to most marketing information systems — products, customers and sales-force information. It is said to integrate this data to support sales administration, market management, product management, sales management, planning and results measurements.

The package consists of a Gateway Facility that reportedly provides local security and determines where requested data is stored in the network and the Sampol facility.

Sampol is available for \$125,000 and the Gateway Facility for \$35,000 from Honeywell, Inc., 200 Smith St., Waltham, Mass. 02154.

Conversion Aid Out for MCBA

VANCOUVER, B.C. — Computype Services has announced a conversion package designed to enable Mini-computer Business Applications, Inc. (MCBA) accounting software, which was designed for Data General Corp.'s CS systems, to run under DG's Advanced Operating System (AOS) and AOS/VS.

Computype reportedly has consolidated CS program modules and data files to achieve a set of packages that perform on DG's largest AOS computers. In addition, a module is available to allow the user to direct output to the system printer, or to a disk file, or to the printer and a disk file. This is intended to accommodate the differences in the way in which CS and AOS handle the printer queue.

The MCBA-AOS conversion software is available for \$4,000 from Computype at 342 Water St., Vancouver, B.C., Canada, V6B 1B6.

'Calc/34' Updated For IBM System/34

WINTER PARK, Fla. — Westmoreland Systems, Inc. has announced Calc/34 Version 2, a financial modeling package for IBM's System/34.

The package generates spreadsheet projections and handles "what-if" situations. Enhancements included in Version 2 reportedly include consolidation and faster execution of models and access to user file data.

The package costs \$1,000. The firm is located at Suite 1, 228 Park Ave. N., Winter Park, Fla. 32789.



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Running Under VRX 'Maxs' Report System Out for NCR

CINCINNATI — A five-part management reporting system called Maxs for use on NCR Corp. mainframe computers running under VRX has been developed by Recon Systems, Inc. The modules are available as a group or separately from the Software Clearing House here.

Maxs includes a hardware performance assessment module called Paxs, which reportedly records a four-year history of statistics on hardware usage and produces summary reports and graphics on demand. The module is priced at \$1,200.

The job/file usage reporting module, Jaxs, reportedly cross-references all jobs and files by user, account and activity. Auditors can use Jaxs to audit usage of a particular program or file, according to the vendor. It also costs \$1,200.

The Surcharge module adds financial calculations to the data collected by Jaxs, enabling service bureaus to charge their customers and controllers to distribute costs between internal profit centers fairly, the vendor said. It costs \$1,500.

The Progress module generates reports for analyzing internal data processing projects, according to the vendor. It too sells for \$1,500.

The fifth module is called Catalyst, and it records and cross-references the various jobs or control strings run at a site, reportedly acting to

eliminate duplicate jobs and as a backup in case a job is lost. It also audits jobs for runtime patches. The price of this module is \$1,475.

An accounting-based software

package is needed to run the Maxs system and costs \$700. The entire bundle can be purchased for \$6,440 from Software Clearing House at 771 Neeb Road, Cincinnati, Ohio 45238.

Construction Finance Tool Runs On IBM System/34

PHOENIX — Computer Guidance Corp. has introduced a construction accounting and cost-control software package that runs on IBM's System/34.

The Construction Management System (CMS) is composed of seven financial and cost-control applications, according to the vendor. It reportedly features on-line entry, edit and update capabilities for receivables, payables, labor costs, job costs, contracts, inventories, purchase orders and financial conditions. It also provides financial reporting and computer security by company or division as well as application, for companies with multiple divisions, the vendor said.

CMS also maintains a history of most detail transactions, including general ledger, job costing, vendor invoices and payments, material receipts and contract billings and payments, the vendor said.

Each of the CMS applications can be

installed individually or as part of an integrated accounting and cost-control system. The applications range from \$3,000 to \$24,000, depending on the number ordered. Additional information is available from Computer Guidance at 2301 E. Shea Blvd., Phoenix, Ariz. 85028.

Victor 9000 Gets WP Packages

CHICAGO — Victor Business Products, Inc. has introduced two word processing packages and reportedly has increased the storage capacity of its 16-bit desktop business system.

Victorwriter II is said to allow the Victor 9000 to perform all the functions of a dedicated word processor. The programs handle the creation and revision of documents and document merges and appendages.

Victor's version of Micropro International Corp.'s Wordstar software reportedly makes use of the programmable keyboard of the Victor

NCR Users Get Banking Package

PACHECO, Calif. — Software said to allow NCR Corp. Central Information File (CIF) and Customer Loan and Savings System (Class) software users to issue real-time management queries from their existing data bases has been introduced by Century Analysis, Inc.

First/1 reportedly permits non-technical banking and financial managers to execute reports interactively from a workstation. The user does not need to know the physical relationships among data elements, according to the vendor.

First/1 is said to maintain security by element, file and report. The package costs \$13,500 from 114 Center Ave., Pacheco, Calif. 94553.

9000. Fifty different functions are said to be provided through single keystroke commands.

To the Victor 9000, the firm has added a 5¼-in. Winchester disk with a 10M-byte storage capacity and a double-sided, 5¼-in. floppy disk that raises the system's total capacity with floppy disks to 2.4M bytes.

Victorwriter II costs \$645. The enhanced Wordstar package costs \$500. The Victor 9000 with dual double-sided diskettes costs \$5,895 from the firm at 3900 N. Rockwell St., Chicago, Ill. 60618.



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*1981 Datamation Brand Preference Study of the Data Processing Industry, OEM and End-User Markets. Infosystems Magazine, 1981 Survey of Terminal Usage. 1982 Brand Preference Survey conducted by Data Communications Magazine.

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Issco Graphics Packages Interface With HP 2700s

SAN DIEGO, Calif. — Integrated Software Systems Corp. (Issco) has announced that its Tell-A-Graf and Disspla graphics software packages will now interface with Hewlett-Packard Co. 2700 color graphics terminals.

The interfaces are said to make use of HP 2700 functions including full-color, polygonal areas and cursor input. Graphics generated on the HP 2700 terminals can be downloaded to terminal disks for later use.

The Tell-A-Graf and Disspla packages reportedly run principally on Digital Equipment Corp. VAX-11 series processors and IBM mainframes running 370-era systems software.

The vendor pointed out, however, that interfaces are available to other systems as well. The software costs between \$19,500 and \$58,000, depending on the processor. The HP 2700 interfaces are available at a nominal charge, the vendor said.

Issco is located at 4186 Sorrento Valley Blvd., San Diego, Calif. 92121.

SMS Announces Debugging Tools

ORANGE, Calif. — Software & Management Systems, Inc. (SMS) has introduced three products designed to assist in developing and debugging software on Hewlett-Packard Co. HP 1000 systems operating under RTE.

Forms/1000, priced at \$875, is a menu-driven program said to allow interactive creation and modification of complex screen forms for data entry and display applications.

Debug/1000 is said to allow the debugging of any HP 1000 program, including segments, at the machine-code level. Usable with a loaded program, the software costs \$930.

SMS/1000 is said to allow the system manager to debug a system, master the internals of the system and repair troubled areas caused by on-line activity and/or hardware malfunction. It costs \$800.

SMS is located in Suite N, 320 E. Katella Ave., Orange, Calif. 92667.

AMA Courses Go On-Line

NORTHBROOK, Ill. — On-line summaries of the American Management Association (AMA) Extension Institute's self-study courses and audio cassette courses have been made available via time-sharing on Management Contents' data base.

Through an agreement between AMA and Management Contents, each chapter in each course will be summarized and indexed. The data base currently lists articles from over 500 business periodicals as well as books and proceedings of professional associations. It is available on the time-sharing systems of Bibliographics Retrieval Service, Systems Development Corp., Dialog Information Services, Inc. and Datastar in Europe.

The new offering will be on-line in September, according to a spokeswoman. Charges will be based on connect time. Orders can also be made on-line, the company said from Suite 5000, 2265 Carlson Drive, Northbrook, Ill. 60062.

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IRM!

THE INVISIBLE REVOLUTION

By Forest Horton Jr.

WHILE ALL THE LATEST breakthroughs in information and communications technologies dominate the headlines, another, quieter breakthrough is taking place in the management of information: information resources management (IRM).

This quiet revolution is evident in corporate organizational charts, in policy statements dealing with information access and management, in the revision of job descriptions for information professionals. And it's no accident that this revolution is coming at a time when information handling costs are skyrocketing.

But organizational charts, policy directives and job realignments aren't exactly the stuff of which headlines are made. Nor are companies, government agencies, colleges, hospitals and other enterprises eager to call attention to the changes, especially if executives and officials "lose turf" in the process. So the IRM revolution is quiet and, to a large extent, invisible.

Just what is IRM? There is no single, agreed-upon definition yet, and there may never be one. Like human resources management and financial resources management, IRM means different

Information can and should be managed like a corporate resource. Here the former director of the Commission on Federal Paperwork — which was responsible for promulgating the IRM concept — explores career opportunities in IRM and how to approach organizational realignment.

things to different people.

More and more experts and opinion leaders agree that information can and should be managed, perhaps not precisely as we manage other resources, but nevertheless managed to achieve bottom-line results. For example, John Diebold was one of the first to endorse the IRM idea several years ago: "The corporations that survive and flourish in the '80s will be those that come to regard information as a valued asset."

In 1977 in its final report to the Congress and to the President, the Commission on Federal Paperwork stated: "In-

formation is not a free good, any more than pure drinking water or clean air are free goods. Government must come to regard its information flows and holdings as valued but costly assets that must be managed in the same way it manages human resources, financial resources, physical assets and even natural resources."

More and more trade journals in the fields of information, data processing, telecommunications, office automation and related fields are also subscribing to the IRM view-

point. According to a *Computerworld* editorial in September 1981, "Separation of information management from systems management may limit the DP department's clout, but it could create new career opportunities for DP professionals. This separation, which would come from information resources management (IRM), could allow DP managers to step into roles as crucial to corporate success as those of chief financial officer or marketing vice-president.

"IRM calls for much more than a computing background. Many DP managers are unqualified for the job of en-

IN DEPTH

sure that information flows truly benefit their organization. But some DP managers who also possess insight into user wants and needs and the organization's overall course may go farther with IRM than they could as technical specialists."

Just as the introduction of computers created more jobs — not fewer, as Cassandras of the '40s and '50s had predicted — so IRM will create new and even better career opportunities for all kinds of professional, semi-

professional and clerical people working in the information-handling field.

We are now passing through a temporary realignment period as companies consider their total information resource and how to manage their information assets in a complete life-cycle context — that is, from the moment information requirements are crystallized, through successive stages of collection or production, storage, retrieval, dissemination, use

and eventual destruction or long-term archiving. How companies reorganize their IRM functions will have a measurable impact on their bottom-line results.

Basic Concept

Let's briefly review the basic IRM concept.

First, information, next to people, is coming to be regarded as an enterprise's most valuable asset. The reasons for this are not hard to guess:

- Accurate, complete, timely and relevant information, placed in the hands of key decision makers at the right moment and in the right format, is often the critical ingredient in success or failure. It means taking an informed risk or taking advantage of an opportunity that would otherwise be missed.

- Information is the key to assimilating a scientific or technological breakthrough into "practical assembly lines," whether we're talking about a commercial enterprise, a government agency, a hospital using a new drug, a college applying for federal or state grants or other assistance or a trade association formulating a policy position.

- Competition is getting fiercer every day, and inflation and high interest rates place a premium on getting the right kind of information to keep ahead of the pack.

- At a global level, how knowledge is assimilated by nation-states has a great deal to do with their long-term economic survival. To get an idea of how the Japanese look at information and knowledge, try reading *Japan as No. 1* by Ezra Vogel.

The Information Commodity

In order to establish the appropriate machinery to manage information (organizational structure, authority and responsibility assignment, functional statements, management systems and so forth), one must start with a thorough understanding of both the differences and similarities between information and other kinds of resources. One can then formulate meaningful IRM approaches that capitalize on this knowledge.

For example, just as you can buy coffee in a can or a jar, instant, ground, whole and in other ways, so you can buy information in a variety of forms: an on-line data base search, a bound paper report, a looseleaf publication, microfiche, a video recording, output on a television screen, telephone messages and so forth. And just as coffee's quality and appearance may vary according to packaging, brand, place of purchase, vendor and so on, so information's relevance, timeliness, completeness, reliability and accuracy vary from one context to another.

On the other hand, information is also different from conventional goods. Leone Trubkin, president of Data Courier, Inc. and a highly respected information industry executive, makes these distinctions:

- By and large, information products are not fungible, not capable of mutual substitution. Each is unique in coverage, scope, format, purpose; whereas almost any desk can serve the function of a desk, almost every information product is sufficiently different from every other to provide a niche in which the marketplace may be said to have failed to provide for a specific need.

- Information products and services are optional, and potential cus-

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tomers/users must be educated to their value and usefulness. The consequential needs to generate awareness, to educate as to value, to train in most effective use — these provide the impetus toward marketing.

- Information products and services are expensive to produce, and their costs are justified on the basis that they will be used.

- Information is not consumed by use. A desk acquired by an organization will depreciate over time and not be resold. Information acquired by an organization, however, can be resold (or given away) with no diminution of its value either to the organization or to the outside user.

- Information is not static. It must be maintained, at least as to currency, and there is a powerful thrust toward making improvements, especially related to more comprehensive coverage and higher quality.

- Information is an intangible that can be disseminated in many media. As new technology promises to reduce dissemination costs or increases the potential audience, utility or accessibility, momentum builds to make use of that new technology.

- The price of information may have little relation to the cost of production. The "first-copy" cost may contain more than 90% of the total production costs, and price must take into consideration the potential unit sales. Forecasting the market for an individual information product is therefore critical to establishing a price that will spread not only the marginal but also the first-copy cost across all customers.

- Revenues from information products and services must cover education, training and marketing costs. Because information is optional and justified on the basis of use, it must be heavily marketed, and customers must be trained in effective use. Prices must be set not only to cover first-copy and marginal production costs but also heavy education and training expenses.

- The price of information may have little relation to its value. One piece of information may save an organization millions of dollars or provide an opportunity to expand revenues and profits significantly. Since it is difficult, if not impossible, to establish value in advance of application, the entry of information products and services into commerce at only marginal cost may make most information suppliers of that product economically vulnerable to the information "dumper."

- Information has a fundamental relationship to the functioning of a democracy. Unlike refrigerators or desks, information is required for full participation by citizens in governing their society.

- Applications for information products and services can reduce the consumption of natural resources, including energy. In the development of economic and social policy, for example, government may look

upon information as a public-sector resource to stimulate desirable behavior. It is but a short step to producing information products and services to reach that objective.

Another respected IRM authority, Prof. Elizabeth Byrne Adams of George Washington University, puts the need for IRM at an organizational level rather than the marketplace level: "In today's organizations we have all sorts of people who are processing information: computer in-

stallations, word processing centers, people who are processing information with paper, pencil and folders. With all of these little chunks of information handling going on throughout the organization, we begin to deluge managers with too much unverified information and bad, conflicting and wrong information.

"These are the problems of most managers in most organizations today. IRM is a solution. IRM is a way

of organizing information flows and information technology to accomplish organizational objectives by maximizing use, minimizing cost and assigning accountability. It's the only way an organization will survive," Adams concludes.

Evolutionary Approach

The information manager therefore shares the same concerns with the managers of traditional organizational resources: "maximizing use,

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minimizing cost, assigning accountability."

Arthur Schneyman, IRM manager for Mobil Oil Corp., stresses the importance of an evolutionary approach to organizational realignments. He recommends a series of stages at which the technologies and functions are gradually integrated to move away from what he calls a "stovepipe" situation in which information streams are moving up and down vertically within long-established channels — with very little horizontal or lateral movement.

In some company environments, for example, it may make sense from a management standpoint to put telecommunications and mainframe computer center operations together in an integrated "informatics" or "communications" setup (as some have described the merger of these technologies). Or, in enterprises moving aggressively into office automation and heavily dependent on word processing operations (for example, law firms, insurance agencies and many kinds of government agencies), a transitional office automation task force may make sense to ensure that proper impetus is given to planning and implementing the office automation facility, organization, operational policies and so forth.

In short, there is no need to throw all the information technologies and information-handling disciplines into the same organizational melting pot. In many, if not most organizations, such a course of action would be traumatic from many standpoints. On the other hand, there are some enterprises and government agencies that have done just that, since they wanted to waste no time setting up the organizational IRM they saw as ultimately necessary. Whatever the chosen strategy, it is a function of the strategic and management climate in the enterprise and the decisions of the chief executive officer.

Paperwork Reduction Act

Federal government agencies have had little choice in the matter because of the passage of the Paperwork Reduction Act of 1980 (which many believe should have more properly been called the Information Management Act of 1980). That law,

P.L. 96-511, specifically calls for:

- Establishing within the Office of Management and Budget (OMB) an Office of Information and Regulatory Affairs to integrate and coordinate

federal information policies, standards and guidelines.

- Every federal agency to designate a "single, senior, focal official" to be responsible for agency compliance

with federal information policy, including planning, budgeting, organizing, directing, training, promoting and controlling activities involved in the collection, use and dissemination of information.

information.

- Integrating ADP and telecommunications and other information technologies more efficiently and effectively, including the preparation of long-range information.

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mation technology plans.

According to the Library of Congress IRM authority Louise Giovanna Becker, "Implicit in the Paperwork Reduction Act of 1980 is the information resources man-

agement (IRM) concept. This may be defined as the planning, budgeting, organizing, directing, training, promoting, controlling and other managerial activities involved with the collection,

use and dissemination of information.

"IRM provides a conceptual framework for managing and developing a coordinated federal approach to some of the interrelated technol-

ogies and processes involved in information management: records management functions; reports processing; information technologies (computer, telecommunications and other electronic in-

formation-handling systems); and information planning, strategy and operations. IRM does not require specific rigid structures, but experiences indicate that certain benefits may be obtained by providing a focus for, or centralization of, information management."

Industry's Views

In a speech reflecting industry's views of the Paperwork Reduction Act, Walter Haase, Planning Research Corp.'s general manager for field operations, had this to say about IRM in late 1981: "In the past, progress toward establishing a meaningful information resources management program was hampered by the fragmentation of responsibility for narrow segments of information policy.

"This fragmentation of responsibility resulted in a lot of nonproductive conflict between the groups representing various information policy interests, an inability to effectively resolve many of these conflicts and a fair amount of bureaucratic competition as each group vied for broader information policy responsibilities.

"While very important, the placement of these responsibilities in one office represents, in my view, only a rudimentary beginning to the establishment of an IRM program in government. I believe it will take a long time for the concept of IRM to mature.

"I have observed," Haase continued, "the evolution of the IRM concept for more than two decades. Progress has been very slow because we are talking about concepts that are totally foreign to traditional organizational theory and current information management practices. It has also been slow because some of the earlier initiatives closely related to current IRM concepts, such as the integrated management information system concepts of the '60s, failed to produce promised results.

"This and other setbacks have eroded top management confidence and have caused [management] to be very cautious about new initiatives. But it is too soon to measure the results of the [Paperwork Reduction] Act," Haase concluded.

Before his retirement from the Civil Service, Haase was considered the DP/MIS czar in OMB. He is therefore well

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qualified to evaluate the evolution and prospects of IRM.

The role of IRM in helping to rationalize and sort out what historically have been overlapping, conflicting and redundant information management roles within organizations needs to be amplified further. For example, what is IRM going to mean to the MIS community?

IRM can help get the monkey off the MIS community's back. In a sense, MIS officials are at a cross-

roads. As John Diebold has said, "If they continue to pursue a course of narrow specialization, tight centralized control and abdication from the difficult chore of helping users identify their information needs, they will not be able to accomplish the larger goals of IRM."

And, "while MIS officials currently are not optimally situated in most cases to oversee the totality of company information resource investments, it would appear they are po-

tentially well situated in most companies to assume the overall information management mantle. MIS and IRM must come to regard themselves as a 'partnership for the '80s.'"

Important Currents

Because of the "on-line revolution," powerful corporate information centers have been evolving in many companies that take a very modern view of how information

technologies can be harnessed to serve a company's professional and technical needs — whether in the office, laboratory or plant.

Often these information centers are headed by librarians who sit in on top corporate meetings regarding strategy, budget, control and other agenda and thereby get a firsthand feel of exactly what kinds of information and information resources the company needs. Librarians may be the best candidates to assume "the information management mantle," as Diebold put it, in many kinds of organizations.

We should not take the view that MIS professionals should all be "annointed" to the top IRM post. As more and more enterprises come to know and understand the value of accessing external data bases and tapping into on-line library networking resources, an understanding of knowledge classification and organization becomes more important. Few MIS people have acquired that kind of understanding. And if they aspire to the top IRM post, they should upgrade their credentials in this vital area.

Another important current is evident in many organizations with large and important statistical units where the value of data and statistics is crucial (for example, in actuarial firms, economic analysis groups, insurance and banking operations). In such cases, the aspiring top IRM manager must appreciate the value of statistics and statistical methodologies to the overall goals of the company. There is no reason a chief statistician should not evolve into the IRM manager.

No rigid IRM formula need be applied to all cases. Instead, every enterprise should examine its fundamental business and determine its IRM jurisdiction based on a careful analysis of how the information resource can best support the goals of the organization.

College Preparation

While all of this is going on in industry, the academic community is debating how it should respond to the challenge of educating people for information management. It is perhaps no accident that the library and information science communities have been in the forefront of this movement. For example, there are at least three or four universities with strong information management curricula, including Syracuse University, the University of Denver and the University of Southern California.

It is puzzling that business schools have lagged in moving toward IRM. To this writer's knowledge, not a single business administration school has yet installed a master's degree program in IRM. Some schools, however, such as Southern Illinois University at Edwardsville and the Wharton School at the University of Pennsylvania, have developed IRM courses.



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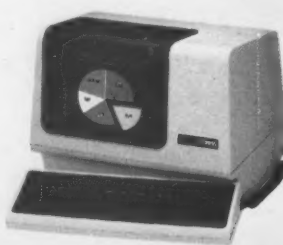
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It is interesting to note that certain schools of public administration, notably the school at the University of South Carolina, have aggressively moved to embrace information management. That university, for example, now has before its appropriate academic and state bodies a proposal to establish an Institute for Information Policy, Technology and Management.

On the professional-society front, much is going on. Several informa-

tion management groups already exist, including Associated Information Managers, established in 1979, with a membership now approaching 1,000. More recently, both the Society for Management Information Systems and the Special Library Association have considered changing the names of their groups to something like "Society for Information Management."

Curiously, the American Management Association has yet to take a po-

sition on the matter. It has mounted several IRM seminars and conferences, but like the business schools, it seems to be content to let the MIS and library communities take the lead. On the other hand, the Association for Systems Management, with a membership of more than 10,000, has embraced IRM and has made IRM its primary thematic goal for the '80s. The Association of Records Managers and Administrators has also strongly supported IRM.

The debate will continue at the individual, organizational and societal levels as different groups jockey for position on the IRM question. Interesting developments can be expected.

Another IRM authority, Jon C. Stonecash of Control Data Corp., has made the following observations:

"Ideally, the IRM perspective should be applied to the overall corporate strategy. The IRM perspective ought to be used to transform the organizational strategies into measurable objectives for information, to transform those information objectives into plans to create the necessary information-handling systems and to integrate these information resource plans into the overall strategic plans for the organization.

"In practice, it won't happen in most organizations for quite a while. In some organizations, it will never happen. IRM has to earn its place in the organization through being useful. For the IRM professional, that means doing what can be done today with existing tools, attitudes and constraints. It means working for small victories: creating a standard for part numbers, showing one manager how to use a user-friendly business graphics package or consolidating two independent application files into a unified data base.

"Those who sell IRM as if it were the salvation for the organizational soul, as if it were the answer to all problems, as if IRM required sweeping changes to the totality of the organization all at once, do the concept of IRM a disservice," Stonecash warns.

The quiet, invisible, evolutionary approach — cautiously moving in incremental steps — is the best way to move toward IRM. Every enterprise should think through its own strategy — not simply reach out and grab what the other guy is doing.

About the Author

Forest (Woody) Horton Jr. is an independent consultant specializing in information management.

From 1975 to 1978 Horton directed the Information Management Study for the Commission on Federal Paperwork, which was responsible for promulgating the IRM concept.

Prior to that, Horton directed MIS and DP staffs for the Executive Office of the President, the State Department, elements of the Department of Defense, the Environmental Protection Agency and the General Services Administration. In his government career, he served as an operations research analyst, management analyst, systems administrator, records management officer, analytical statistician and technical information officer.

Horton is the author or editor of five books in the information management field and has been a contributing editor to a half-dozen information-related publications. He has also held teaching tenures at several universities including the University of Maryland, Syracuse University and American University.

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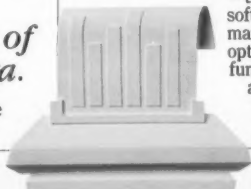
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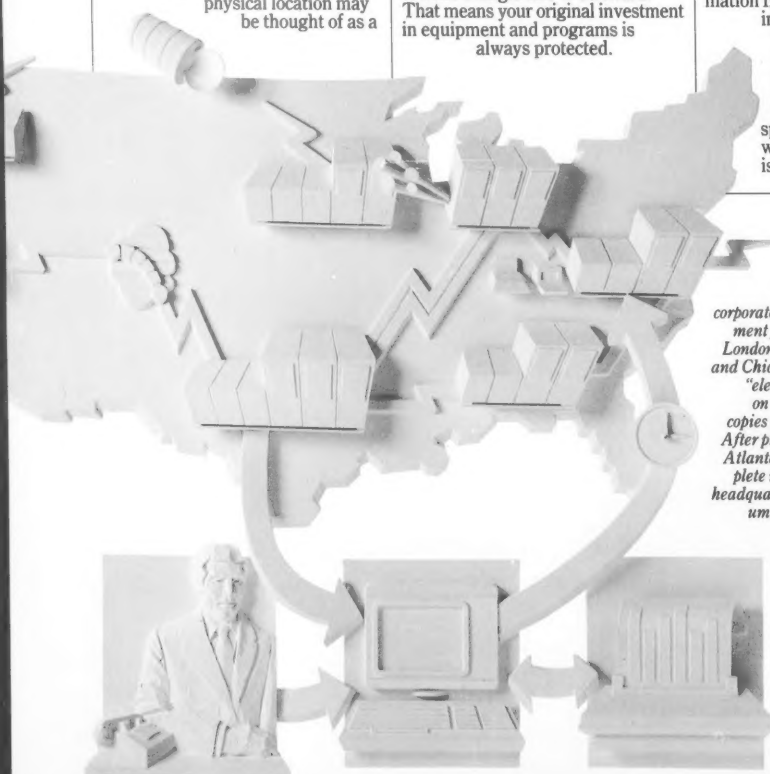
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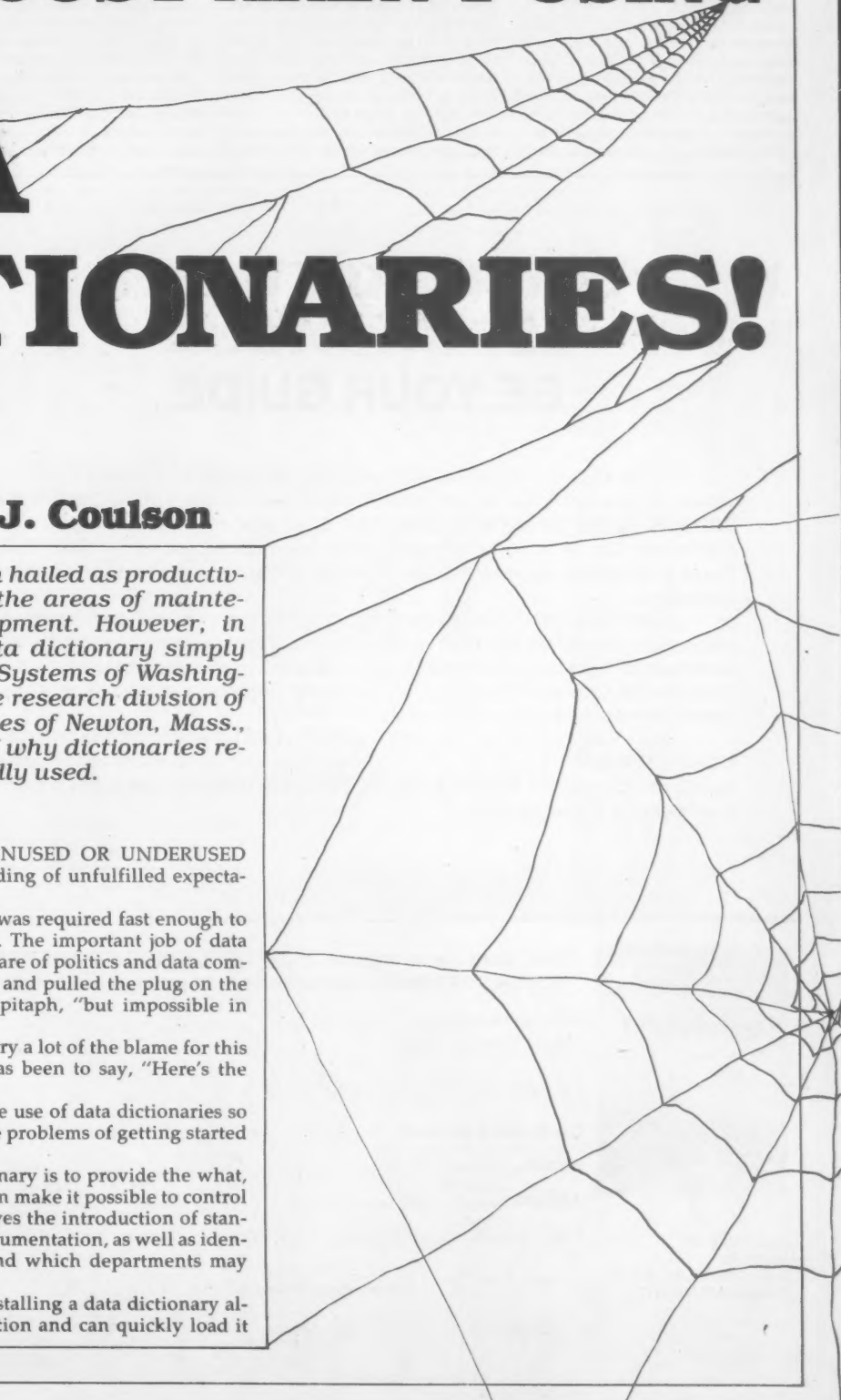


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PEOPLE JUST AREN'T USING DATA DICTIONARIES!



By Christopher J. Coulson

Data dictionaries have been hailed as productivity boosters, especially in the areas of maintenance and system development. However, in many installations the data dictionary simply has not caught hold. Sage Systems of Washington, D.C., commissioned the research division of Coulson-Wellinger Associates of Newton, Mass., to collaborate on a study of why dictionaries remain unused or only partially used.

MOST OF THE REASONS FOR UNUSED OR UNDERUSED data dictionaries fall under the heading of unfulfilled expectations.

The software could not do what was required fast enough to establish itself and prove its worth. The important job of data administration turned into a nightmare of politics and data complexity. Management saw no return and pulled the plug on the project. "A great idea," runs the epitaph, "but impossible in practice."

Data dictionary vendors must carry a lot of the blame for this state of affairs, for their attitude has been to say, "Here's the software. Now *you* use it."

To see why this has impacted the use of data dictionaries so radically it is necessary to look at the problems of getting started in data administration.

The primary aim of a data dictionary is to provide the what, where and how of data usage that can make it possible to control future uses. A dictionary also involves the introduction of standards for names, definitions and documentation, as well as identifying corporate owners of data and which departments may share data items.

In an ideal world, a company installing a data dictionary already has a handle on this information and can quickly load it

IN DEPTH

up to reap the benefits of dictionary use. Unfortunately, it is precisely because it is not an ideal world that the need for a dictionary is realized in the first place.

The following statistics are taken from the case history of a medium to large size company, with a 12-year-old data processing department running an IBM 3033. The company runs approximately 60 systems, with an average of 50 programs per system.

These 3,000 programs access about

2,400 physical data sets. However, because of a lack of naming standards the company has found that each data set is referred to in its programs by as many as five file names.

In the worst case, it is therefore possible that the number of file definitions at the installation could be as many as 12,000. What is more horrifying is that with three records per file there is a possibility of up to 36,000 record definitions, and at 10 fields per record we are left with an

awesome possibility of 360,000 item definitions.

The worst case, fortunately, rarely arises. However, even if the numbers are divided by three, the task of analyzing them and applying standards to them before loading them onto the dictionary is an enormous task.

Accordingly, the dictionary is made usable too slowly to justify the changes in procedure it brings with it, the corporate claims made for it and the management investment put

into it. Staff changes are inevitable, and the data dictionary must be in active use if it is to survive the loss of an enthusiastic administrator. Yet the administrator is bogged down by the need to develop and apply standards and by the morass of unconsolidated information from the past that must be loaded if the dictionary is to be immediately useful.

Three Solutions

There are three "solutions" that installations adopt for the problem of dealing with existing systems.

The first of these is to ignore them and only to load new systems. This is fine if an installation happens to be rebuilding all the important systems or if it has justified its software and management commitment on benefits to be obtained in three years' time.

The second "solution" is to work mainly on new systems and to take on the existing systems as and when required. While this looks reasonable on the surface, it is bound for failure because unless DP staffers get into the habit of using the dictionary, it will fall out of use. After a month or two of looking for information via the dictionary and not finding it, they revert to their old ways and never use the dictionary again.

The third "solution" comes from the vendors. It consists of an automated system that reads, extracts file and data definitions and loads them into the dictionary. While this succeeds in populating the dictionary very quickly, it also transfers the chaos of the past to the future.

Naming Standards

These methods are all highly fallible in terms of getting a dictionary into a usable state fast. One reason the task of setup is so complex is that it involves the introduction of naming standards.

Programs and systems are usually built, modified and expanded over many years and by many programmers. Everywhere standards were in place and enforced, different programming languages required different constraints. Accordingly, a single field could be called by 10 different

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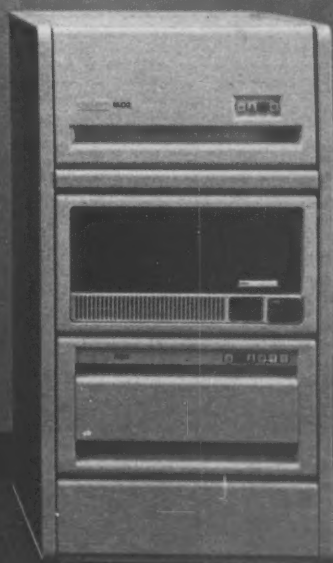
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DATA DICTIONARIES

In Depth/20

IN DEPTH

names in 10 different programs.

The naming problem falls into three main areas: synonyms, homonyms and aliases. Synonyms are different names for the same enti-

ty that have become accepted due to common corporate usage. For example, the ACCOUNT NUMBER to the accounts department is the CUSTOMER CODE to the sales department.

Homonyms occur when the same name has a different meaning according to the context in which it is used. An example is the name INVOICE, which has totally different implications in ac-

counts receivable and accounts payable contexts.

Aliases are different names for the same entity, which are determined for DP technical reasons. These may be planned, as in the case of dif-

ferent programming languages, or unplanned, as in the case where no standards exist.

For dictionary setup to be meaningful, it is necessary for occurrences of all these names to be identified and related to a single naming scheme. This is often a large if not impossible task to carry out manually. It becomes even more difficult if data usage crosses programs or even crosses systems.

Two-Tiered Approach

A different approach to the process must therefore be considered, such as the following:

A two-tier automated system could be developed that would have useful purpose both before a dictionary was acquired and afterwards. At the first tier the source code of individual programs could be analyzed automatically.

This single program analysis could then be submitted to a systemwide analysis that would relate it to all the components across a system or multiple systems. At this point the data administrator could apply relatively quickly any parameters needed to fit the program for automatic loading onto the dictionary.

The first analysis would identify the number of source lines per division, identify the errors and provide file information. In ad-

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The first analysis would identify the number of source lines per division, identify the errors and provide file information. In addition, it would provide detailed information on file and record layouts and a cross-reference for the data division.

Such an analysis would provide a substantial amount of material to furnish both the data definition and other documentation aspects of dictionary setup. By being presented together, the names and usages of data become immediately apparent, and anomalies within programs can be resolved fairly quickly.

The next stage would be to input this analyzed information, with manual amendments, to the cross-system analysis.

This would take all the information from all programs in a system and associate them in such a way that naming differences may be easily resolved. For example, this could be done in a Cobol program by associating level numbers so their commonality — despite different names — can be discerned.

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IN DEPTH

user-controlled parameters so that existing usages could be condensed into the dictionary version and a cross-reference maintained. The "new" version could then be automatically loaded onto

the dictionary.

Such a setup would have two major benefits. First, it could be used before the introduction of a data dictionary with immediate gains in maintenance productivity

and to build an analyzed, standardized file ready for immediate loading. Second, it would provide a continuing cross-reference between the dictionary's definitions and those in "old" programs.

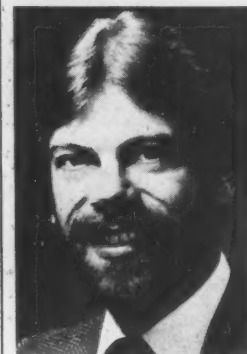
This approach would thus ensure that the data dictionary could be *usable* very soon after it was acquired. It would also ensure its ongoing use and the necessary management commitment to

guarantee its future.

If designed with sufficient diagnostic and analytical capability, the setup system would continue to be useful after the "old" information was loaded onto the dictionary. In this respect it would differ radically from current automated systems. It could, for instance, act as a preprocessor to ensure adherence to installation standards pertaining not only to data names, but also to language use and coding style.

While data dictionaries were once heralded as offering the opportunity for cleaner code, it is now clear that definitions must be clean before they are loaded onto the dictionary. The system outlined here would take some drudgery out of resolving "old" problems and make the dictionary usable from the start.

About the Author



Christopher Coulson is president of the consulting firm Coulson Wellinger Associates in Newton Lower Falls, Mass., which provides specialized research and market development services to the information processing industry.

Coulson's interest in data dictionaries began with the formation of the Data Dictionary Working Party of the British Computer Society. Later, as manager of communications for MSP, Inc., he helped introduce the Datamanager data dictionary.



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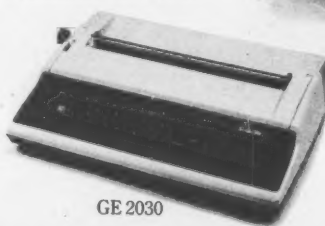


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FCC's Rejection of BPSS May Delay American Bell's Net 1

WASHINGTON, D.C. — A procedural dispute in the Federal Communications Commission (FCC) which resulted in rejection of AT&T's proposed Bell Packet Switching Service (BPSS) has set the stage for a delayed start-up of the planned Advanced Information Systems/Net 1 of American Bell, Inc., AT&T's new subsidiary.

The FCC rejected the BPSS tariff and two interrelated tariffs July 29 on the recommendation of the commission's Common Carrier Bureau. The rejection was based on the argument that AT&T had failed to get commission approval for projected BPSS switches. The bureau also believes the service, planned to

support initially only the American Bell offering, has unresolved problems relating to the FCC's Computer II decision, which mandates separation of AT&T regulated and unregulated services.

The bureau expressed concern that BPSS was designed solely for American Bell and would not be available on an equal basis to its competitors.

The tariff rejections should not greatly delay the Net 1 plans of American Bell because AT&T was expected to file quickly a revised tariff with the changes needed to answer FCC concerns. Either as a result of a refile or by utilizing existing facilities, Net 1 could be in operation by the end of this year.

Isacomm Gets Green Light To Install DTS in 38 Cities

ATLANTA — ISA Communications Services, Inc. (Isacomm) has been granted authority by the Federal Communications Commission to construct a digital termination service (DTS) in 38 cities.

Operating at transmission speeds up to 1.544M bit/sec, the system will link Isacomm earth stations with customers' stations with 2-ft antennae. The

company has contracted with Local Digital Distribution Co. for the central node equipment and user terminals.

The first installation, to be located here, is scheduled during the fourth quarter of this year and 14 additional cities are expected to be added in 1983. Services to be offered include video teleconferencing and document distribution.

Datapoint Unveils Telex System, Automates Message Creation

SAN ANTONIO, Texas — Datapoint Corp. has announced a system that it said automates telex message creation, gives its workstations telex sending and receiving capabilities and permits conversational telex machines access to selected Datapoint data bases.

The International Telex Management System (ITMS) has been tested to the specifications of postal, telegraph and telephone administrations in six European countries, according to a Datapoint spokesman.

The user is provided with a broad range of communications options when using ITMS with Datapoint's Attached Resource

Computer (ARC) local network, the spokesman said. The range of remote access for a network user is extended to international telex, and telex stations can gain access to the network.

System Features

The system includes a hardware interface module and associated software that will allow it to be used on Datapoint processors in either a stand-alone configuration or as a component of an ARC local net.

A message reportedly can be created at any workstation using text editing software. It can be reviewed on the screen and modified, if necessary, without

Telecommunications Today Offers Throng Of Exciting Services

By David F. Hemmings
Special to CW

New telecommunications services are today where computing services were 15 years ago. However, the telecommunications industry is now offering some exciting new services — high-speed data transmission to share computing power and memory, high-speed facsimile to improve dispatching facilities, video teleconferencing to reduce inefficient travel time and more.

A private network can control the cost of these services between nationwide offices and plants. A return on investment of 30% to 70% and a payback period of 18 to 36 months are being achieved by most organizations with private networks.

Telecommunication networks, like computing facilities, usually utilize a combination of technologies and products, including satellite communications, microwave radio links, digital switch equipment, lightwave (fiber optics) communications, short-range mobile and cellular radio, video-teleconferencing facilities and broadcast products and systems.

Each network is unique because organizations have differing requirements based on

their locations, capacities, growth expectations and financial and technical resources. For example, in a typical case, up to 60% of all communications traffic takes place within a building or local complex. Only 8% of the traffic goes beyond 500 miles, but this is a critical area of operation for medium-size and large organizations and an area in which a large portion of communications costs are incurred. So private networks offer an important solution for the total communications problems of corporations.

Communications Costs

How can private networks improve your communications costs? And how do you decide what investment to make? Most organizations do not have the staff trained in the evaluation or operation of private networks. However, there are qualified resources available to provide all or some of these services for a reasonable and cost-effective solution.

What is a turnkey private network? And what can you expect from suppliers? Communications between cities can be provided by wide-area (satellite) private networks. Each satellite terminal is generally located close to the office or plant it serves. If a site survey indicates interference in the area, a microwave access line is installed between the satellite terminal and the organization's location — normally less than 15 miles distant.

For communications within a city, building complexes are interconnected by microwave or lightwave links. Within each building complex, there is a private-branch exchange (PBX); and in each city, a private network.

(Continued on Page 56)

CCI Front-End CPU Competes With IBM 3704, Memorex 1270

TORRANCE, Calif. — Computer Communications, Inc. (CCI) has designed a front-end processor to compete with the IBM 3704 and Memorex Corp. 1270 communications controllers.

The CC-6 uses a version of CCI's Network Communications System control software. It supports one or two host computers (IBM 370 and compatible) and up to 32 communications lines at speeds up to 9,600 bit/sec, the vendor said. From one to four of the 32 lines may be wideband at up to 56K bit/sec.

Other features include mixed terminal protocol support, terminal translation, autodial/autotransmission, automatic transmis-

sion rate detection, code conversion and high throughput, a CCI spokesman said.

Line support upgrades from two to 32 lines are accomplished by printed circuit board additions. System growth is accomplished by a field upgrade to CCI's CC-8 Enhanced Communication Processor, which is said to offer support for up to 240 lines and four host computers, according to the vendor spokesman.

The CC-6 supporting four asynchronous lines rents for \$1,100/mo, eight lines for \$1,300/mo and 16 lines for \$1,400/mo. More information is available from CCI, 2610 Columbia St., Torrance, Calif. 90503.



The Datapoint International Telex Management System

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Digital's new VT131 features built-in advanced video, printer port and block mode.
Now you can get all the features of DEC's VT100 plus the options you've always wanted: advanced video, printer port, U.S./European half and full duplex communications and modem controls, and local edit/block mode transmission.

And all of these features are hundreds of dollars less than it would cost to buy them option by option for a VT100. Although the new VT131 is totally self-contained and has no functional upgrade options, MTI can retro-fit your terminal with graphics from Digital Engineering to make it Tektronix 4010-compatible.

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Carterfone Enhanced CRT Emulates IBM 3276 Model 2

DALLAS — Carterfone Communications Corp. is offering an enhanced version of its 7276 control unit/CRT terminal that reportedly emulates the IBM 3276 Model 2 via the Binary Synchronous Communications protocol and was designed specifically for 3270 network locations that do not require clustered CRT terminals.

The 7276-022 features local format storage and editing capability. The format storage feature reportedly reduces line traffic by storing frequently used formats. The formats can be retrieved instantly, the vendor said.

An extensive set of edits can also be loaded from the host for each format.

The edits are said to eliminate host editing requirements since the editing is performed at the CRT terminal. The operator receives immediate indication of errors as a message for each specific error is displayed when it occurs. Some of the key edits include numeric, alphanumeric and date, the vendor said.

In locations where there are existing 7276s, the unit can be easily upgraded to a 7276-022 to include the local format and editing capabilities.

The 7276-022 costs \$3,450, Carterfone said from Suite 1400, 1111 W. Mockingbird Lane, Dallas, Texas 75247.

Visual 50 CRT Terminal Boasts Variety of Independent Features

TEWKSBURY, Mass. — Visual Technology, Inc. has introduced a high-performance CRT terminal said to feature a variety of independent features such as menu-style setup modes in the nonvolatile memory, 25th status line, line drawing character set for chart graphs, smooth scrolling and video attributes.

The Visual 50 also features streamlined plastic housing, tilt-and-swivel capabilities, nonglare screen, detached keyboard and matte-finish

keycaps, according to the vendor.

Among the additional features are a 12-in. display screen, 7 by 9 dot matrix character presentation, 128 Ascii character set and blink, underline, reverse video, dim-and-blank video attributes. An RS-232C serial interface allows communications to a variety of host computer systems, the vendor said.

The terminal is available for \$695 from Visual Technology, 540 Main St., Tewksbury, Mass. 01876.

Telecommunications Offerings

(Continued from Page 55)

work can include a tandem digital switch with least-cost routing capability. These facilities generally allow digital transmission of voice and data traffic between any company location nationwide. Additionally, full-motion color video-teleconferencing circuits can be added to the private network at a low additional cost.

Suppliers of turnkey private networks should offer a complete response to specifications for wide-area and switch-and-access network equipment. Site surveys and facilities design work must be undertaken, transmission analyses developed, civil works contracts let at all organization locations (for earthworks, cement pads, towers, poles, ducts and buildings) and equipment must be installed.

Upon interconnection of the equipment, each system in the private network is made operational — antennas locked onto a satellite, microwave links aligned, lightwave cable spliced and digital switches made functional according to design specifications.

Test Procedures

Upon completion of some "burn-in" for each system, the private network is completely interconnected to start an important series of test procedures. As tests progress, the supplier will connect the private network to other embedded equipment, such as computers, controllers, PBXs, telephone lines and video-teleconferencing facilities owned by the organization.

Upon successful completion of these tasks, the private network is

put through a commissioning procedure, which is an extended test program for typically two to 10 weeks. Thereafter, the private network becomes the property of the organization it serves.

Private networks allow you to control your communications costs and you can save administrative expenses as soon as a network is installed and operational. Freedom for growth of your business communications, without concern for tariffs, is particularly important. And the technologies, qualified resources and practical experience are already in place.

The return on investment for a private network is now sufficiently attractive for you to consider alternative telecommunications facilities.

David F. Hemmings is responsible for planning and implementation of private business networks with the Telecommunication Networks Division of Harris Corp., Melbourne, Fla.

Aydin Announces Digital Channel Bank

FORT WASHINGTON, Pa. — The Aydin Monitor Systems Division of Aydin Corp. has announced a digital channel bank that reportedly allows alternate voice and data usage of a channel by modems operating at up to 9,600 bit/sec.

The Model 6248 Variable Quantum Level Channel Bank combines 48 voice channels into a single 1.544M bit/sec T-1 channel through a method that encodes voice at 32K bit/sec rather than the conventional 64K bit/sec, a spokesman explained.

The unit costs \$1,250 from 502 Office Center Drive, Fort Washington, Pa. 19034.

Fiber-Optic Graphics System Said to Outdistance Coaxial Cable

WORCESTER, Mass. — Artel Communications Corp. has unveiled a fiber-optic computer graphics communications system that reportedly transmits high-resolution computer-generated video signals 100 times further than is possible with conventional coaxial cable.

The T-2013 and R-2013 are plug-in transmit/receive modules that transmit high-resolution RS-170 or RS-343 video signals up to a mile over fiber-optic cables. Available bandwidth accom-

modates either 1,280 by 1,024 or 1,024 by 1,024 pixel resolution.

The T/R-2013 permits long-distance interconnection of the workstation monitor and the computer video display generator without loss of video resolution. The fiber-optic cable also is said to eliminate problems associated with electromagnetic

noise pickup, hum, ground faults, lightning and communications security.

Both red-green-blue color and monochrome video signals can be handled.

The price for the system is approximately \$1,500/channel. Artel can be reached through P.O. Box 100, West Side Station, Worcester, Mass. 01602.

Data Xchange Series Out

CHAMPAIGN, Ill. — Compre Comm, Inc. has introduced a series of multiprocessor-controlled intelligent time-division concentrators and communications network processors.

The Data Xchange multiprocessing data handler's composite link protocol may function with either a synchronous or asynchronous network up to 19.2K bit/sec with individual port-selectable speeds up to 9,600 bit/sec.

A four-port version of the Data Xchange costs \$2,550; an eight-port version costs \$3,500; a 12-port version costs \$4,450; and a 16-port version costs \$5,400.

Compre Comm is located at 3200 N. Farber Drive, P.O. Box 3570, Champaign, Ill. 61820.

Phalo/OSD Fiber Optics Adds Unit

CHATSWORTH, Calif. — Phalo/OSD has introduced an addition to its line of fiber-optic systems that is said to allow high-speed serial synchronous communications between computers.

The 5 MHz wideband synchronous data set, Model 306E can also be used as a communications link for the IBM remote 3272 control unit to repeaterless distances to 5 km. It provides a fiber-optic front end in replacement for the Bell 306 data set for T-1 digital transmission facilities. It can provide an alternative communications medium for the Bell 303 data set, the vendor reported.

The unit is available for \$1,750 in the stand-alone version and \$1,650 rack-mounted from Phalo/OSD, 9240 Deering Ave., Chatsworth, Calif. 91311.

Interview 4500 Gets SNA Aid

ALEXANDRIA, Va. — Atlantic Research Corp. is offering a comprehensive Systems Network Architecture (SNA) diagnostic application package for users of its Interview 4500 interactive test systems.

The package consists of a series of programs, resident in the 4500's program library, for the purpose of exercising and testing IBM 3276-type terminals in a Synchronous Data Link Control (SDLC)/SNA environment. The tests can be modified for other SNA-like applications, the vendor said.

The package simulates an SNA host, performs stand-alone terminal tests, monitors network performance, measures response time and saves time by testing remote terminals before connecting the host. It costs \$80 from Atlantic, 5390 Cherokee Ave., Alexandria, Va. 22314.

VAX/VMS users have been looking for the ABLE VMZ/32TM for over a year.*

The ABLE VMZ/32 is a 16-line asynchronous microcontroller with programmable DMA and is fully transparent to VAX/VMS as two 8-line DMF32's.

The ABLE VMZ/32 beats the performance of any existing DZ or DH device.

The ABLE VMZ/32 has interrupt-driven modem control on every line to eliminate the software overhead required by DZ's.

The ABLE VMZ/32 has an "output throttle" allowing a peripheral device to optimize its own data rate.

The ABLE VMZ/32 delivers 30 days after receipt of order.

The ABLE VMZ/32 features a design proven in over 2500 ABLE DH/DM installations with well over 50,000 hours MTBF.

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Data Modems Compensate For Telephone Distortion

LEXINGTON, Mass. — Concord Data Systems has unveiled two data modems that reportedly offer automatic adaptive equalizer technology.

The CDS 224 and its international version, the CDS V.22 BISbis, use the automatic adaptive equalizers to compensate for telephone noise and distortion on even the most marginal lines, the vendor claimed.

The CDS 224 costs \$1,695 and the CDS V.22 BIS, \$965. CDS is at 430 Marrett Road, Lexington, Mass. 02173.

I/O Board Gives Apples Remote BSC Protocol

NEWMARKET, N.H. — IE Systems, Inc. has introduced a serial synchronous I/O board that reportedly enables the Apple Computer, Inc. Apple II or Apple III microcomputer running under Digital Research, Inc.'s CP/M to communicate with remote computers using Binary Synchronous Communications (BSC) protocol.

The board uses seven integrated circuit chips and allows the hardware to emulate a remote job entry terminal when combined with software products from Micro-Integration, Inc., the vendor said.

The serial I/O board with one of the BSC products is priced at \$1,195 from IE Systems, Box 359, 98 Main St., Newmarket, N.H. 03857.

Dual-Function Inventory Stores Numerical Data

BURLINGTON, Mass. — Computer Systems Engineering, Inc. has introduced a dual-function inventory terminal said to store both monetary and itemized numerical data of commercial and industrial stock control applications.

The CSE Ical-150 dual-function inventory terminal comes with typewriter-style keys, 16-char. display and user prompts. It offers expanded memory capability up to 72K char. and employs light-beam data transfer with a standard RS-232C interface, the vendor said.

It is available for \$839 from Computer Systems Engineering, 16 Second Ave., Burlington, Mass. 01803.

Industrial CRT Unit Offers Wand Bar-Code Reader

HUDSON, N.H. — Digital Equipment Corp. has introduced an industrial-grade CRT terminal with a built-in bar-code reader that reportedly can read four different bar-code types using a hand-held, visible-light scanning wand.

The RT137 can be used in manufacturing and warehouse environments and at inspection stations and assembly stations. Communications from the terminal to the host processor is the same as from DEC's VT100 terminals.

The RT137 terminal is priced from \$4,500 from DEC, 146 Main St., Maynard, Mass. 01754.

Enhancement Offered For DEC VT52 Emulator

ST. LOUIS — Micro-Term, Inc. has announced an enhanced version of its Mime 340 terminal, which is compatible with the APL character set and emulates a Digital Equipment Corp. VT52 terminal.

Features include a horizontal split

mode, block-mode transmission, a full 10-key numeric keypad and transmission speeds of up to 19,200 bit/sec, the vendor said.

The unit costs \$995, the vendor said from 1341 Hanley Court, St. Louis, Mo. 63144.

Programmable Controllers Get CRT-Based Interface

SAN JOSE, Calif. — An intelligent CRT-based operator interface for programmable controllers has been announced by Metra Instruments, Inc. The Metra 2000 reportedly can communicate with multiple programmable controllers of mixed brands or models, host computers and peripheral devices with standard communications devices.

Data Briefs

The unit is said to feature a multi-tasking operating system that permits modification of display formats and process recipes without interruption of normal operation.

A basic system with a black-and-white or green-on-black CRT costs \$9,000. A basic system with a color CRT costs \$15,000. Metra is at 2056 Bering Drive, San Jose, Calif. 95131.

Portable Diagnostic Tests Aid Data Communications

LINCOLN, R.I. — A portable diagnostic data communications test set is available from International Data Sciences, Inc. (IDS).

The Hawk 4010 Datatrap monitors and interactively communicates with data appearing at the RS-232 inter-

face. Data traffic is displayed on a 5-in., 512-char. CRT display.

The microprocessor-based unit operates with synchronous data rates up to 19.2K bit/sec in both half- and full-duplex modes. The Model 4010 costs \$4,995 from IDS, 7 Wellington Road, Lincoln, R.I. 02865.

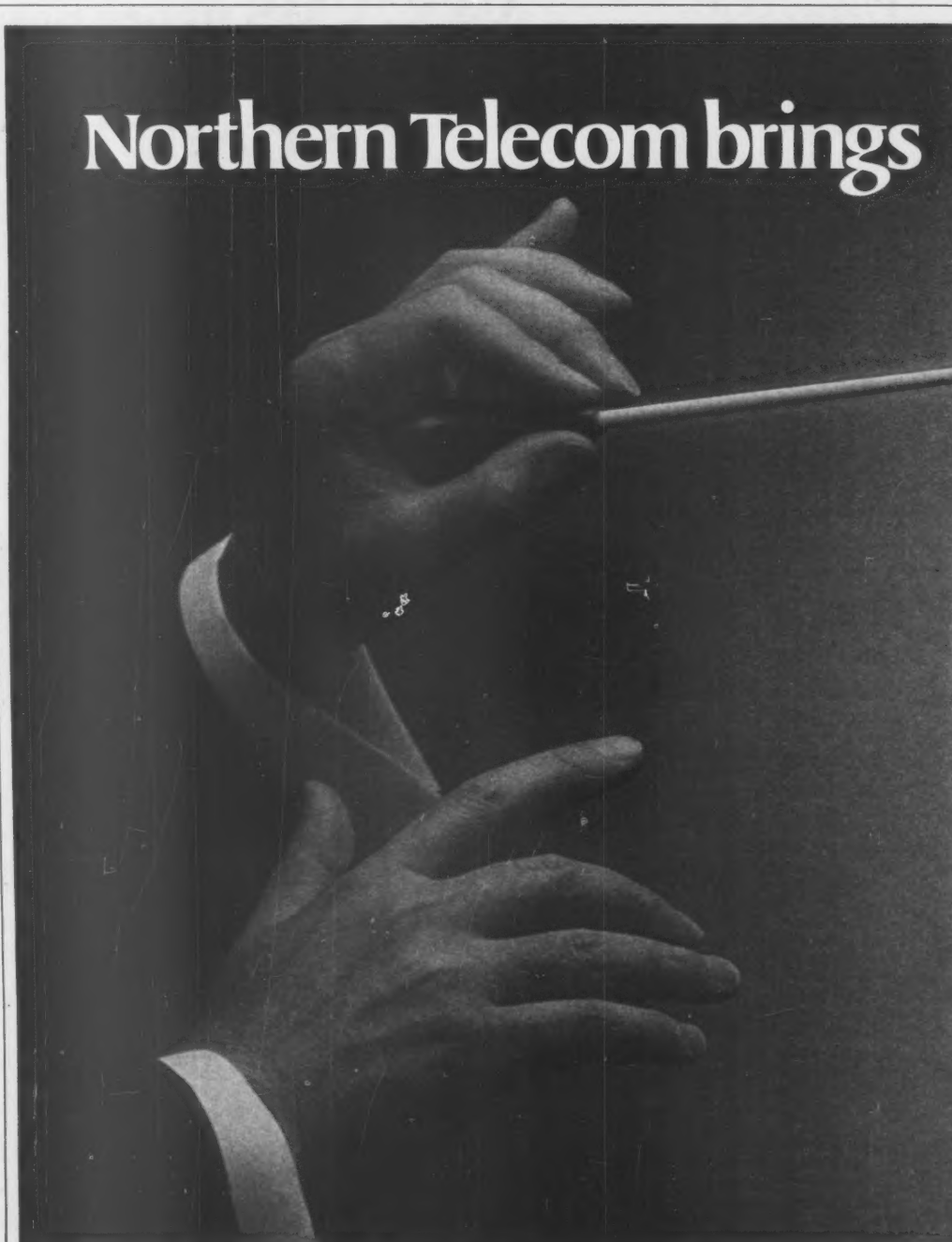
Radio Shack Introduces High-Speed Direct Modem

FORT WORTH, Texas — Radio Shack has announced a high-speed direct-connect modem that operates at 0- to 300- or 1,200 bit/sec for the firm's TRS-80 microcomputer.

The DC-1200 modem operates asynchronously at 0- to 300 bit/sec and either synchronously or asynchronously at 1,200 bit/sec.

The unit costs \$699. An autodial option costs \$149.95, Radio Shack said from 1800 One Tandy Center, Fort Worth, Texas 76102.

Northern Telecom brings



Protocol Emulation Software Out For IBM-to-Astra File Transfer

LEXINGTON, Mass. — NEC Information Systems has introduced protocol emulation software for its line of Astra business computer systems. It is said to enhance the company's Message Management System software, which includes protocol emulation for IBM 3740, 3780 and Astra-to-Astra file transfer via synchronous communications.

The IBM 3270 protocol emulation enhancement to the Message Management System allows an Astra system to emulate IBM 3271, 3274 and 3276 binary synchronous communications synchronous terminal communications protocol to a host mainframe. Transmission of data occurs at speeds up to 9,600 bit/sec, a vendor

spokesman said.

The software is available for \$1,200 from NEC Information Systems, 5 Militia Drive, Lexington, Mass. 02173.

MZ-80 Processor Version Released

CONCORD, Calif. — Thomas Engineering has introduced a larger, lower priced configuration of its MZ-80 communications processor, which reportedly allows dumb terminals to emulate the IBM 3270 CRT terminal.

The processor is based on a Z-80B microprocessor. Up to seven I/O boards can be configured, each with four serial I/O channels and 32K bytes of random-access memory.

Line of 4-, 8-Channel Muxes Features Dual Applications

SUNNYVALE, Calif. — Prentice Corp. has introduced a line of microprocessor-based four- and eight-channel multiplexers for point-to-

point and multipoint applications. It can be used as a multipoint master in multidrop multiplexer systems, the vendor reported.

The SNP-1200 series incorporates a modified, high-level data link control framing protocol that is used between units providing reliable error protection on the aggregate link. A local echo feature eliminates the need for a remote computer echo, allowing for more efficient use of the transmission line, a vendor spokesman said.

Asynchronous data from up to eight input channels is statistically multiplexed and transmitted synchronously at rates up to 9,600 bit/sec.

The unit is available for \$1,495 from Prentice Corp., 266 Caspian Drive, Sunnyvale, Calif. 94086.

Mux Combines Fiber Optics, MSI Circuitry

CANOGA PARK, Calif. — Canoga Data Systems has introduced a multiplexer that is said to combine fiber-optic technology with medium-scale integration circuitry. The circuitry is said to allow any speed terminal to be connected to any port without any hardware or software programming.

The CMX-808 multiplexer reportedly features full maximum data rates of as much as 19.2K bit/sec that can be accommodated simultaneously on each channel without data buffering or peak-load shutdown. Data connections are made through standard RS-232C 25-pin D-type connectors.

The fiber-optic transmission cable cannot be tapped or monitored by unauthorized parties and provides total electrical isolation between the ends of the data link, a vendor spokesman said.

The multiplexer costs \$1,200 from Canoga Data Systems, 21218 Vanowen St., Canoga Park, Calif. 91303.

Videotaped Course On Nets Available

ATLANTA — A videotaped short course surveying the latest concepts in data communications systems and networks is now available from the Association for Media-Based Continuing Education for Engineers, Inc. (Amcee). Titled "Packet Switching Networks," the self-study course consists of 16 color video cassettes, a study guide and a textbook.

A manager seeking an overview of the field will find a comparison of processing and transmission costs for various data communications techniques, the tradeoff between capacity and delay in satellite systems and a comprehensive discussion of common-carrier service, an Amcee spokesman said.

The course can be rented for \$1,440 or purchased for \$4,800. Study guides are \$32.96 each and textbooks are \$34 each from Amcee, 225 North Ave. N.W., Atlanta, Ga. 30332.

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Sure, it's possible to go it alone; to match wits and tools with any problem. Still, there's nothing like sound advice and able support to see you through a tight spot.

Which is why STC has built the largest independent field organization in the industry; more than 3000 people eager to help you plan, implement and maintain your system. People with the experience to smooth the route to your objectives.

Consider your present operating plan. You know where you are now. You know where you want to be by year end. In between are obstacles. Most are minor. Others will test the limits of your skills and resources: That daunting performance bottleneck. The looming capacity problem.

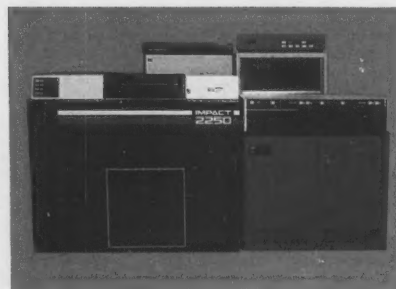
It is here that STC's Systems Engineers can help. They'll work with you to define and

quantify the problem, then map out a solution. In some cases they may recommend specific hardware from STC's line of high-performance disk, tape, printer and system-level products. In other cases they may simply show you how to get more from your present gear.

Whatever your configuration, service from STC Field Engineers keeps your hardware in shape to fulfill its mission. With on going training, special diagnostic tools and on-site spares they're prepared to respond immediately to any problem.

Advanced hardware. Uncompromising support. With STC behind you, you can undertake the most ambitious goals with confidence.

For details, contact your local STC Marketing Representative. Or write: Storage Technology Corporation, 2270 South 88th Street, Louisville, CO 80027. Phone: (303) 673-4063.



**STORAGE
TECHNOLOGY
CORPORATION**

Fulfilling the promise of technology

Contains 32-Bit Dual Bus

Synapse Introduces Transaction System

MILPITAS, Calif. — A high-performance, fault-tolerant transaction processing system that uses a series of shared-memory processor modules, which commonly access each other along a dual 32-bit bus, has been unveiled by Synapse Computer Corp.

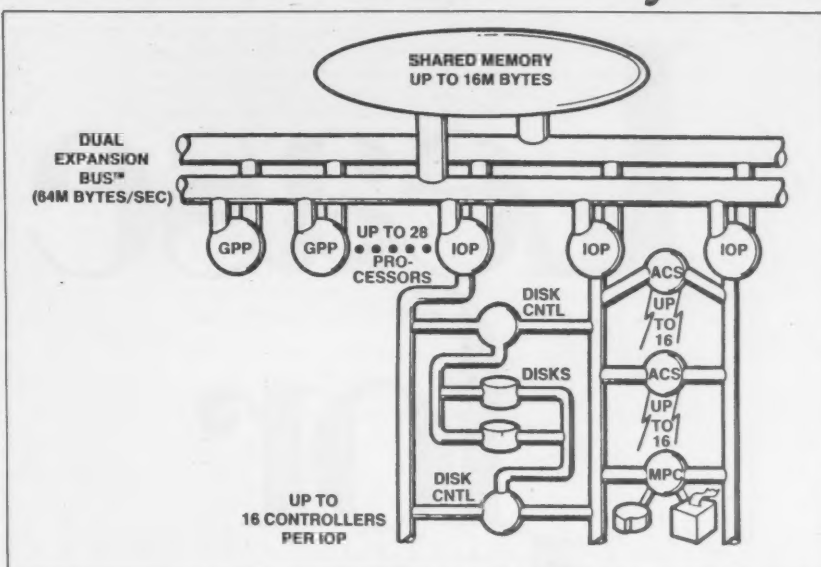
Said to be the first mainframe computer built from microcomputers, the Synapse N+1 is competitively targeted at systems such as Tandem Computers, Inc.'s Non-Stop Series and Stratus Computer, Inc.'s transaction processing system. However, it can be expanded to include up to 28 processor modules, reportedly enabling users to increase the computer's capabilities from the performance level of a minicomputer to that of a high-end mainframe.

In its lowest configuration, the system is said to have the power of an IBM 4341 or Digital Equipment Corp. VAX-11/780 machines. And in its highest configuration, a Synapse spokesman claimed, the computer approaches — and may even go beyond — the processing capabilities of IBM's high-end 3081 Model Group D mainframe. The firm has not yet run any benchmarks or scientific comparisons to back up these claims, but bases them on internal testing and applications.

Handles Specific Functions

The Synapse system's 16-bit processors were designed to handle specific functions of the machine's operation. For instance, the General Purpose Processors (GPP) execute application programs while the system's I/O Processors (IOP) connect to device controllers and manage all I/O transfers, a spokesman said. Up to 28 processors can be added to the system in any combination.

An additional processor, called the Advanced Communications Subsystem (ACS), interfaces to the IOP and controls up to 16 communications lines. It also executes the terminal-dependent and line protocol por-



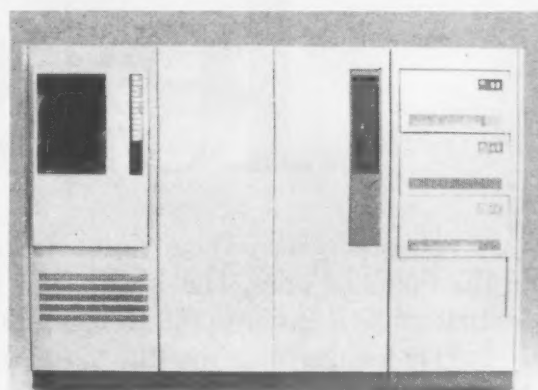
The Synapse Expansion Architecture

tions of the computer's operating system. Up to 16 ACS subsystems can interface to one IOP, allowing up to 256 lines per IOP, the spokesman added.

Unlike competing systems, which spread data and the work load across a series of computers linked by a high-speed bus, Synapse keeps all of its processors within a single cabinet. Users increase the system's processing or I/O capabilities by plugging in additional processor boards instead of attaching separate computers.

The key to the system's transaction processing capabilities is its 32-bit dual bus — the Synapse Expansion Bus — which operates at 64M byte/sec, the spokesman noted. Unlike the buses on competing systems, the Synapse product is about 24 inches long and contained on a printed circuit board. Since it is constructed in a dual configuration, if either half of the bus fails, the system will continue to operate using the other half, he claimed.

The system can have up to 16M bytes of on-line memory



The Synapse N+1 Transaction Processing System

and operates under Synthesis, an integrated set of software facilities that reportedly includes a high-performance relational data base management system, systemwide application dictionary facilities and a transaction processing manager. All system software is written in Pascal. In addition, the system supports both Ansi '74 Cobol and Pascal.

Up to 16 disk controllers can interface to one IOP, the spokesman continued. Each controller is capable of handling up to four dual-ported 151M- or 413M- byte Winchester-type disk drives.

The system also has a multipurpose controller, which interfaces to a 6,250 or 1,600 bit/in., 125 in./sec magnetic tape drive; 600 or 1,200 line/min printers; and system clocks and timers.

The basic fault-tolerant N+1 system includes two GPPs and three IOPs, 6M bytes of shared memory and two memory controllers, two disk controllers, two 151M-byte disk drives, two master program control controllers, a 125 in./sec tape drive, a magnetic tape drive, two system consoles and 30 additional asynchronous ports. The cost of the system is \$340,000, including the initial software license.

First system shipments are scheduled for the last quarter of this year by the firm at 801 Buckeye Court, Milpitas, Calif. 95035.

Extends Features of 3375

IBM Unveils Speed-Matching Buffer

WHITE PLAINS, N.Y. — A speed-matching buffer recently introduced by IBM is said to extend the features of the firm's Model 3375 direct-access storage device and increase the unit's flexibility, particularly for users who want to share the device among different processors.

The Model 3375 buffer attaches to IBM's 3880 Model 1 or 2 storage control units and can support block multiplexer channels with data rates as low as 1.5M byte/sec, a spokeswoman

said. In effect, the device allows the sharing of direct-access storage devices by processors with different block multiplexer channel speeds while taking advantage of higher speed channels.

The buffer reportedly incorporates special channel commands and has host programming support that will handle write prenotification. The buffer's operation allows data transfers across the channel into the buffer to begin in advance of the data transfer from the buff-

er to the direct-access storage device, reportedly without sacrificing disk revolutions.

A maximum of two speed-matching buffer features for the 3375 can be installed on a 3880 Model 1 and one on a 3880 Model 2. It is not available for the 3880 Model 3, the spokeswoman noted.

The buffer, which will be available for the first quarter of 1983, costs \$11,420. It can also be leased or rented for \$290/mo for a Model 1 or \$341/mo for a Model 2.

Lease for less\$.

These days the crucial numbers in a data processing decision are often the financial ones. That's why IBM just announced two new term leases that make it easier to put IBM computers to work for you.

The result: Your monthly costs can run substantially below the cost of renting the equipment.

The new leases apply to new or installed IBM System/34s, System/38s, the 4300 and 8100 series, and to a range of other supporting hardware where the total combined purchase value equals \$100,000 or more.

Now, with our two new options, IBM offers nine different ways of tailoring a purchase, lease or rental. One of these may be just right for you.

For details on how the nine plans work, call IBM's toll-free number listed below and we'll send you *A Guide to Financing Alternatives for IBM Products*. Or write IBM, 1 Culver Road, Dayton, NJ 08810.



Call IBM Direct 1 800 631-5582 Ext. 90. In Alaska and Hawaii, call 1 800 526-2484 Ext. 90.

The Only Things Cold Are the Drinks

Mini Manages Brisk Business For Resort Firm All Year Around

SNOWBIRD, Utah — The temperature is definitely on the warm side, the grass is growing and the only frost to be seen here is that which is collecting on the rims of the ice-cold drinks sold to tourists.

However, while the dawning of ski season here at the Snowbird Ski Resort is still months away, business continues at a frantic pace. Snowbird Corp., owner and operator of the famous ski resort, also runs a shopping center, four lodges and nine restaurants. To complicate matters, more than 200 of the available rooms at each lodge are privately owned condominiums that the firm offers for rent, and nearly the same number of other rooms is held on a time-sharing basis by about 5,500 different owners.

To keep a rein on what could be a nightmare if managed manually, the company has a Basic Four Corp. System 730 computer that is connected to about 32 terminals

scattered throughout the resort. The computer, installed a little more than a year ago, handles all front- and back-office accounting chores and fees for the various rental units and furnishings, according to Frank R. Spilker, Snowbird's vice-president of finance.

Until recently, the resort's in-house computer was used exclusively for accounting. The company originally began using automated data processing years ago through a computer service bureau in Salt Lake City. However, this involved batch processing operations. The only terminal provided was a thermoprinter that was too slow for practical use, Spilker explained.

The corporation moved up to in-house processing in 1977 with the purchase of a small business system — a Basic Four Model 700. The system included four terminals and a high-speed printer and was

(Continued on Page 64)

Models Run Under Zeus

Zilog Adds Four to Supermicro Family

CAMPBELL, Calif. — Zilog, Inc. has expanded its existing supermicro family with four additional system models that reportedly can be upgraded to provide large minicomputer-class performance for less than \$40,000.

At the high end of its System 8000 family, Zilog has added the Models 21 and 31, which can expand to support as many as 24 concurrent users and hold up to 320M bytes of disk storage a spokesman said.

At the System 8000's low end, the firm is now offering Models 10 and 11, which can accommodate a maximum of eight concurrent users for prices starting at less than \$14,000.

Run Under Zeus

Like the System 8000's original member, the Model 20, all four additions to Zilog's 16-bit microcomputer family run under the company's Zeus operat-

ing system, a variation of Bell Laboratories' Unix Version 7.

The use of a common operating system results in software compatibility across the entire line and permits application programs to be transported without recompilation from one Zilog system to any other, the spokesman said.

Starting in November, the newcomers to the System 8000 series will also be available with Unix System III, the latest and most advanced release of the Bell Labs control program.

An optional intelligent communications processor reportedly allows all four Zilog system models to be interconnected through the company's Z-Net II local networking facility.

In processing power and other functional capabilities, the latest System 8000 additions reportedly compare roughly to competitive offerings like the

IBM Series/1 and System/38, Hewlett-Packard Co. HP 3000 series and Digital Equipment Corp. PDP-11/70 and VAX-11/730.

All four models are intended for both volume end users and OEMs and come with identical peripheral controllers. Also standard throughout the System 8000 line is the machines' CPU board, which incorporates a 6 MHz Zilog Z8001A microprocessor.

Both the Model 11 and the entry-level Model 10 start with 256K bytes of parity or error-correcting memory and one 18M-byte 5¼-in. Winchester disk unit.

By plugging additional printed-circuit boards into the systems' six-slot card cage, users can expand their main memory to 1M byte and add a second disk module for a total external storage capacity of 36M bytes.

Models 10 and 11 differ main-

ly in their backup storage capabilities. With the entry-level system, backup is provided through a 1M-byte floppy disk unit. With the Model 11, users can opt instead for a nine-track, 17M-byte cartridge tape module, the vendor spokesman reported.

Optional Chassis

Both the Models 21 and 31, meanwhile, start with a 10-slot card cage and 1M byte of error-correcting memory. An optional expansion chassis allows users to add another 10 circuit board slots and expand their main memory to 4M bytes.

Like their two smaller sister systems, the Models 21 and 31 are differentiated primarily by their external storage. The latter system supports up to four 80M-byte storage module device disk units; the former, an equal number of 32M-byte drives.

All four additions to the System 8000 line support a variety of programming languages, including C, Fortran, Pascal and Basic, the spokesman said.

A basic Model 10 system costs \$13,950, compared with \$16,950 for a Model 11, \$29,950 for a Model 21 and \$37,950 for a Model 31.

Shipments of the Models 11 and 21 begin in September, while the Models 10 and 31 will become available in November from Zilog at 1315 Dell Ave., Campbell, Calif. 95008.

Software From Graphics Strategies

Graphics CRT Includes Universe 68

NATICK, Mass. — Charles River Data Systems, Inc. is offering a graphics workstation that consists of its Universe 68 32-bit computer and a graphics processor and software from Graphics Strategies, Inc.

The workstation can reportedly produce medium- or high-resolution color graphics and is suitable for a variety of applications including electrical and mechanical design, scientific graphing, video production and industrial automation.

The graphics portion of the unit consists of a single-board display processor that can create 16 colors at a pixel resolution of 512 by 512 or 1,204 by 1,024.

The processor's features include high-speed vector, circle

and arc generation; line and area texturing; high-quality fonts; and arbitrary cursor shapes with selectable grid lock and two-dimensional transformations.

Optional equipment includes a keyboard, digital tablet or trackball.

The Universe 68 computer in-

cludes a minimum of 256K bytes of random-access memory and 16M bytes of disk, the firm's Unix-compatible Unos operating system and a CRT monitor.

The complete graphics workstation costs under \$27,000 from the firm at 4 Tech Circle, Natick, Mass. 01760.

HP Users Get Printer Converter

FORT LAUDERDALE, Fla. — A Remote Printer Converter (RPC) designed for Hewlett-Packard Co. HP 1000 and HP 3000 computer systems and said to eliminate the need for communications software has been announced by Southern Systems, Inc.

The RPC 9135/HP is offered as a peripheral unit to users of HP systems and printer models 2613A and 2617A. It is also sold as part of Southern Systems printer systems, according to a spokesman.

The unit may be used with synchronous, asynchronous or

direct-connect hardware and can be used on either a dedicated or dial-up communications channel, the vendor spokesman said.

The RPC 9135/HP costs \$2,500 from Southern Systems, 2841 Cypress Creek Road, Fort Lauderdale, Fla. 33309.

MULTIMEDIA

Hotel Automates Desk Services

(Continued from Page 63)

used exclusively for accounting and finance.

However, a few years later, as it expanded, the resort discovered it had to expand its computing powers to other areas. Working out all the software to handle the maze of financial problems and logistics proved to be the firm's toughest problem, Spilker said.

"I don't recall that we ever had hardware problems. The worst we've had are some problems with the printer."

Before selecting its present software system, Spilker and his staff investigated a number of systems and software packages that were installed in hotels in various parts of the U.S. One system they reviewed in Wichita, Kan. — based on an IBM Series/1 — seemed to be suitable, but later proved to be too complicated.

"My feeling was that their system was designed by engineers and not by people with accounting backgrounds," Spilker said. However, "I felt the software which we had been using was designed by people with accounting backgrounds who knew the information that CPAs [certified public accountants] needed and wanted."

Extensive Modifications

Spilker also discovered that if his firm opted for the IBM system, all of his software would have to be modified extensively to comply with IBM's methods — particularly concerning intercompany transactions.

"We would have had to scrap everything we had been using previously for these transactions," he added.

Likewise, a system reviewed in Kansas City appeared to be too slow for Snowbird's applications.

"They were taking reservations manually and entering them into the system later," he noted. "While we were there, they were running 30 to 45 seconds response time, which is unacceptable."

The firm finally settled on a package called Compusystem II, developed by Berkus Compusystems, Inc. of San Diego. This package was broken into both front- and back-office packages, was designed to run on Basic Four's computers and required only an upgrade of the Snowbird system rather than a complete changeover to new hardware. Specific software applications include check-in, check-out, guest billing, reservations, additional charges and all front desk operations.

For the future, the resort plans to install point-of-sale terminals so that the resort's restaurants, bars and other outlets can immediately verify a room charge and place items directly on a guest's bill, Spilker observed.

'Encryptor' Bows For Micros

FAIR OAKS, Calif. — Jones Futurex, Inc. has announced the Encryptor, an encryption/decryption facility for microcomputers.

The module reportedly can be used with S-100-compatible systems as well as micros made by Apple Computer, Inc. and IBM.

The module can encrypt or decrypt data in 25 to 50 μ sec per eight bytes of information. Encrypted items can be sent to any processor compatible with the host processor. The module costs \$395 for S-100 systems, \$245 for Apple processors and \$295 for IBM's Personal Computer from 9700 Fair Oaks, Calif. 95628.

Alphaword III+ Tied to IBM

FAIRFIELD, N.J. — Compuscan, Inc. has announced interfaces that reportedly allow users of IBM's System/32, System/34 or System/38 processors to use the firm's Alphaword III+ page reader.

Alphaword III+ is an optical character reader, which reads text or forms that have been typed on a standard single-element typewriter. Documents are scanned and input directly into the IBM processors without having to rekey the data, the vendor said.

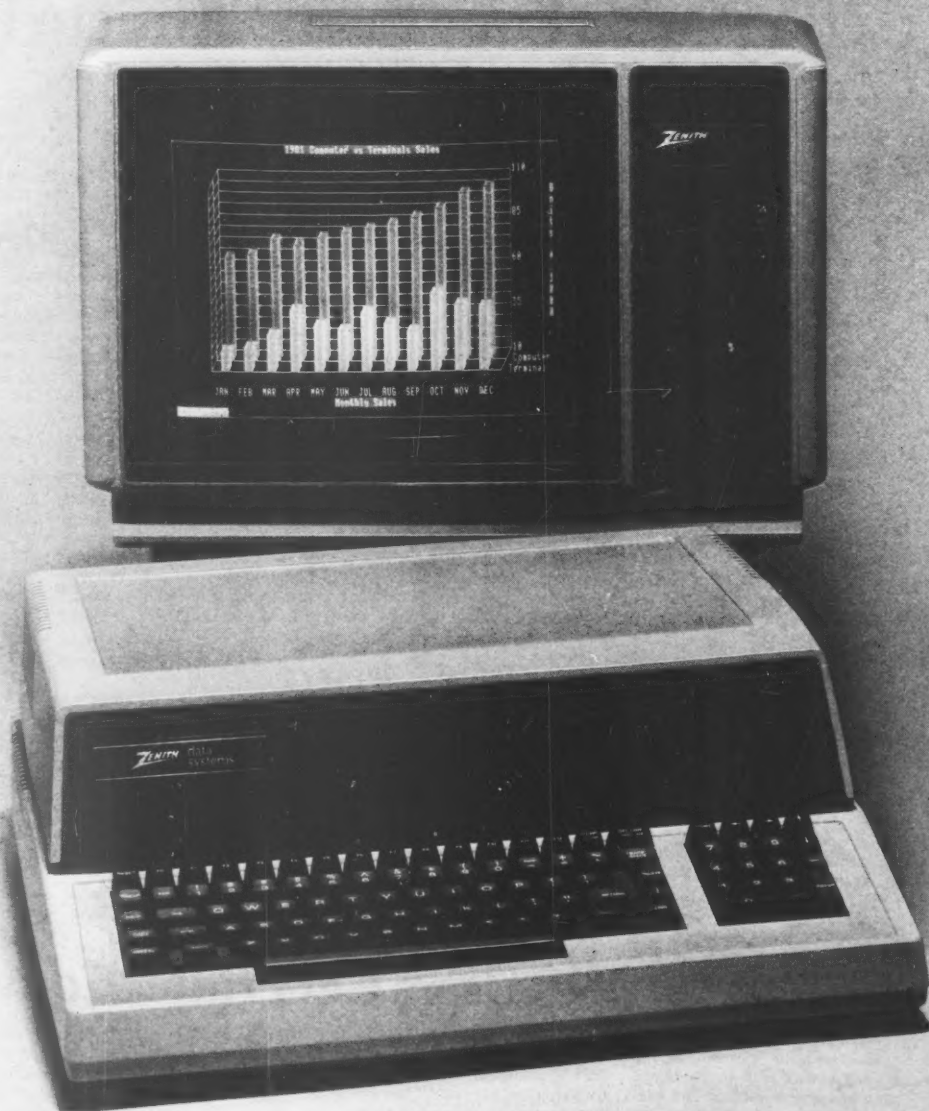
The unit can read up to 300 page/hour and costs \$27,500. The IBM interfaces cost \$2,000 each, the vendor said from 81 Two Bridges Road, Building No. 2, Fairfield, N.J. 07006.

Hotels Get Micro Turnkeys

PHOENIX — New Systems, Inc. (NSI) has announced four microcomputer-based turnkey hotel management systems.

Named Simcom One because of "their simple operation, yet comprehensive nature," the systems include integrated hardware and software, installation and training, the vendor said.

The IBM Personal Computer-based Simcom One/25 costs \$7,995; the Televideo, Inc.-based single-user Simcom One/50 costs \$15,995; the Multi-processor One/75 costs \$29,995; and the NSI OSM Zeus 2-based four-user Simcom One/100 costs \$49,995. The vendor is located at 2505 E. Thomas Road, Phoenix, Ariz. 85016.



"I Think My Watch Just Crashed."

Storage Subsystem Debuts For Variety of Minis

EL SEGUNDO, Calif. — Imperial Technology, Inc. has announced Megram, a solid-state storage subsystem for a variety of minicomputers.

Available for Digital Equipment Corp. PDP-11 and PDP-11/70 processors, Data General Corp. Nova and Eclipse series processors, Westinghouse Electric Co. W2500 processors, Sperry Univac Corp. V70 series and Hewlett-Packard Co. HP 1000 series processors, the subsystem reportedly is available in 1M-byte increments up to 10M bytes.

Megram comes in a 7-in. rack-mountable chassis and can be expanded to 80M bytes by daisy chaining chassis.

The subsystem costs roughly \$5,000/1M byte.

Imperial Technology is located at 831 S. Douglas St., El Segundo, Calif. 90245.

Tape Subsystem Unwrapped

ANAHEIM, Calif. — Datum, Inc. has announced a ¼-in. cartridge tape-streaming subsystem that reportedly provides users of IBM's Series/1 with tape backup for Winchester and removable disk drives.

Included in the subsystem is Datum's Model DSC 50 tape drive, which can transfer up to 20M bytes

Converter Uses RS-232 Serial Port To Interface to Most Systems

PALO ALTO, Calif. — Telesensory Speech Systems, Inc. has introduced a stand-alone electronic text-to-speech converter that reportedly interfaces to "almost any" system via an RS-232 serial port.

Featuring an unlimited English vocabulary, the PR2020 speech peripheral converts Ascii-coded text input into speech output. The vendor's proprietary synthesis-by-rule firmware, resident in the peripheral, reportedly allows words to be spoken with human-like intonation.

The converter contains Telesensory's Prose 2000 text-to-speech converter board, 2W audio amplifier, power supply, serial interface electronics and front-panel controls.

The PR2020 speech peripheral costs \$4,800. A board-level unit costs \$3,500 from the firm at 3408 Hillview Ave., Palo Alto, Calif. 94304.

of formatted data in 4 minutes. The unit has a sustainable transfer rate of 87.2K byte/sec, the vendor said.

Total formatted data capacity is 20M bytes on four tracks. Recording density is 8,000 bit/in., the vendor said.

The subsystem costs \$3,500. Datum is at 1363 S. State College Blvd., Anaheim, Calif. 92806.

Band Printer Fits System/34, 38

STAMFORD, Conn. — Digital Associates Corp. has introduced a band printer subsystem said to be plug-compatible with the IBM System/34 and System/38 minicomputers.

The 34/38-compatible printer, available in speeds of 300-, 600- and 1,000 line/min., is attached to the CPU through an IBM workstation controller port via a twin-axial cable and connector. All interfacing components are housed within the printer, according to the vendor.

These printers feature an up-front LED diagnostic status display, self-test, 64-char. set, 6- to 8 line/in., forms-length selector switch and a one- to six-part forms capability.

The printers range in price from \$6,500 to \$14,000, a Digital Associates spokesman said from 1039 E. Main St., Stamford, Conn. 06902.

Daisy Printer Goes to 112 Char.

NASHUA, N.H. — Facit/Dataroyal, Inc. has introduced a 22-char./sec daisywheel printer said to feature up to 112 char.

The Model 4560 reportedly prints serially and unidirectionally with a standard 2K input buffer, friction platen, cartridge ribbon and RS-232 interface. The unit costs \$1,395 from the firm at 235 Main Dunstable Road, Nashua, N.H. 03060.

Exorcisor Bus Gets Floppy Controller

WESTLAKE VILLAGE, Calif. — Smoke Signal Broadcasting, Inc. has announced a floppy disk controller designed for use with the Motorola Corp. Exorcisor bus.

The controller, called the DCB-4E, is an adaptation of Smoke Signal's DCB-4A board. The unit can handle up to four 8-in. and four 5¼-in. floppy drives on the same controller. Single- and double-density operation is software-selectable and the user can specify the track-stepping rate under software control, the vendor said.

The DCB-4E, which comes with 1K byte of buffer storage, is priced at \$695. Smoke Signal is at 31336 Via Colinas, Westlake Village, Calif. 91361.

Leave it to Zenith to imagine the Z100.

You already know what the other leading desktop computer manufacturers consider state-of-the-art. (If not, the chart below will tell you.)

HOW THE OTHERS DON'T COMPARE

	ZENITH Z100	IBM PERSONAL	DEC RAINBOW 100
MICROPROCESSOR	16 bit/8088 8 bit/8085	16 bit/8088	16 bit/8088 8 bit/280
MEMORY (RAM)			
Minimum	128K	16K	64K
Maximum	768K	256K	256K
DISK DRIVE Packaging Type	Built-In 2-5¼" floppy double-sided/ density	External 1-5¼" floppy double-sided/ density	External 1-5¼" floppy double-sided/ density
Capacity per drive	320K bytes ea. 640K bytes total	320K bytes ea.	400K
HARD DISK CAPACITY	5 MB built-in Winchester (1st quarter 1983)	none	5 MB external Winchester (4th quarter 1982)
EXPANSION			
Parallel I/O Ports	1 external	none	none
Serial I/O Ports	2 external	none	2
Expansion Slots (type of bus)	5 S-100	5 prop.	3 prop.
DISPLAY (Line/Columns)	25 x 80	25 x 80	24 x 80
Color Accessibility	8	320 x 200	4
Graphics/Pixels	640 x 225 8 color	4 color 640 x 200 2 color	780 x 240 4 color
OPERATING SYSTEMS	Z-DOS (MS-DOS) CP/M 80 CP/M 86	PCDOS (MS-DOS) CP/M 86	MSDOS CP/M 80 CP/M 86 UCSD P
SERVICE	On-site	Carry-in	On-site

COMPARISONS AS OF 7/30/82.

Now, imagine a desktop computer with two microprocessors: An advanced 8085 that will run your customers' 8-bit programs faster than ever before. And an 8088 processor, compatible with most existing 16-bit software, including IBM's.

Imagine a desktop computer with up to 128K of user RAM, expandable to 768K. Plus two built-in 5¼" floppy drives with 320K of storage each. Support for 8" floppy drives (IBM 3740 format) comes standard.

Imagine a desktop computer with two serial ports, one parallel port, and a five-slot IEEE 696 S-100 expansion bus!

A desktop computer with a highly-efficient power supply that can handle the most demanding peripherals.

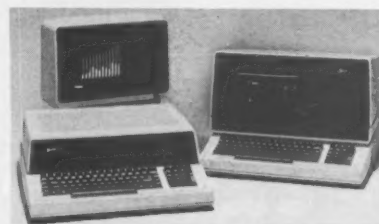
Imagine a desktop computer that offers unsurpassed color or high-resolution monochrome graphics. One that lets the user control 144,000 dots in eight different colors on the video screen.

Imagine a desktop computer that has available an array of 8 and 16 bit software, including Z-basic and the new 16-bit Multiplan. One that offers a choice of operating systems, including ZDOS from Microsoft which is IBM compatible.

Imagine all that in one desktop computer? Zenith did. It's our new Z100 series. And one look at all its expandability, flexibility and configuration possibilities will tell you why Zenith has been a leader in consumer electronics engineering for over 60 years.

And even though the Z100 has all of these outstanding features, it has a lower suggested retail price than IBM and DEC systems of comparable configuration.

To see the Z100 and our complete line of quality microcomputer systems, software and peripherals, contact your nearest Zenith Data Systems distributor. Or call us at (800) 323-5924. In Illinois call collect (312) 391-8860.



The Z100 Low-Profile and the All-In-One.

ZENITH data systems
The quality goes in before the name goes on.

Hewlett-Packard on Office Systems

You don't have to buy separate system processing. With the right solution, you

When you stop to think about it, all you really need from any business computer system is words, data, and graphics. And a way to make them available wherever they're needed. That's all there is to it.

At Hewlett-Packard, we think it's counter-productive to use completely separate systems just to get these simple, basic results.

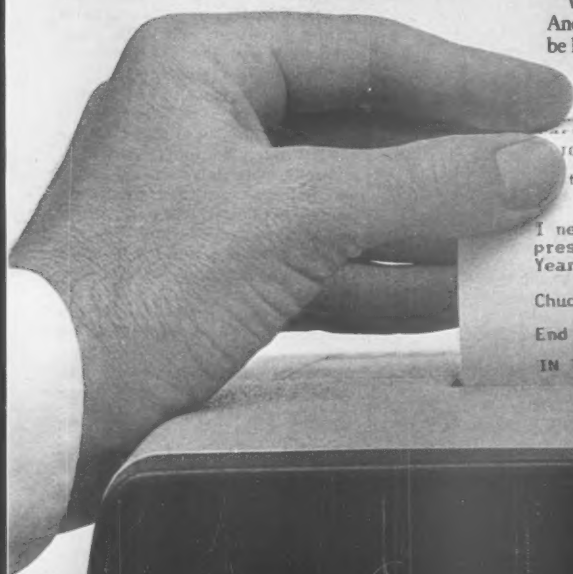
That's why we've developed a solution that puts the power of your data processing computer behind your office equipment. That makes every user's workstation a lot more versatile. And makes our data processing computer the driving force of a network that distributes on-line, interactive information all through your company.

We call this solution The Interactive Office. And we think it's the way office computing will be headed in the future. But you don't have to wait, it's available from us right now.

More power at every workstation. More versatility for every user.

Instead of designing The Interactive Office around a computer, we built it around the needs of the user. And organized it into four functional areas, each centered on the different jobs that come up in everyday business activity.

First, there's Document Management. For creating, revising, printing, and filing text. There's Organizational Communication, which lets you distribute information — including



TO: Lynn JEFFERSON / HDQTR/05
Part 2.

I need our current production cost analysis for my 2 o'clock presentation. Plus fixed overhead cost projections for Fiscal Year '82. How about a chart?

Chuck

End of Item 1.

IN TRAY >

Subject: Cost Analysis
Sender: Charles TAYLOR / HDQTR/01
Part 1.
TO: Lynn JEFFERSON / HDQTR/05
Part 2.

I need our current production cost analysis for my 2 o'clock presentation. Plus fixed overhead cost projections for Fiscal Year '82. How about a chart?

Chuck

End of Item 1.

IN TRAY >

ms for office automation and data can do it all.

reports, memos, charts and graphs—the instant they're created. There's Decision Support, which makes it easy to get what you need to analyze, interpret, and present information. Finally, there's Personal Support, which helps you design a personalized approach to business computing.

So it doesn't matter if you use the computer for word processing, electronic mail, to generate management reports, or to create charts and graphs. Or to do any combination of those things. In The Interactive Office, you can sit down at one workstation and do it all.

Just to give you one example, a secretary's main responsibility might be word processing. But your secretary can use the same word processing workstation to generate a management report for you, complete with charts and graphs, and then distribute your report electronically to branch offices all over the world.

And that's just the beginning. Because every one of our workstations can share the same valuable network resources: high-speed laser printers, data bases, communications links, and more.

More flexibility from your computer.

Our largest HP 3000 is powerful enough to process a large transaction

like the company payroll, and support up to 100 Interactive Office users at the same time. But to give you even more flexibility, the first HP 3000 we ever built is software-compatible with our newer, faster models. Which makes it possible to upgrade to a bigger, more powerful model. Or combine several different models into a multi-node network. Without changing a single line of software.

And besides our powerful office automation functions, we have a full range of software tools for your EDP department. Starting with our IMAGE database, which has won worldwide recognition for its versatility and ease of use. Then there's our set of tools for programmer productivity, which help make them more efficient at designing, implementing, and maintaining new applications. To reduce the EDP backlog even more, we also have a range of off-the-shelf software solutions for manufacturing, distribution, and accounting.

Even the service and support are totally integrated.

Another good reason to do business with HP is our integrated service, which is available from more than 180 facilities all over the world. We'll assign a support team of engineers who'll be personally responsible for every aspect of your office operation. They'll help you plan your interactive office. They'll get to know your people—and your applications. And of course, they'll make regularly scheduled preventive maintenance checks.



All of this helps explain why we have maintained a leading position in customer service two years in a row, according to the 1981 and 1982 Datapro surveys, which involved thousands of computer users. And on the subject of reliability, we'll be glad to offer you our Guaranteed Uptime Service. Which states, in a nutshell, that if your HP 3000 system is up less than 99% of the time over a three-month period, your next month's service contract on all covered items is absolutely free. So far, this guarantee hasn't cost us one penny.

So if you're looking at a lot of different computer systems for your office, we think you'd do well to see how your company could work if you tied it all together with one efficient, integrated solution.

If you'd like to find out more, stop by the local HP sales office closest to you. Or send for our brochure: The Interactive Office. Just write John Celii, Hewlett-Packard, Dept. 03142, 19447 Pruneridge Avenue, Cupertino, CA 95014.



**HEWLETT
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Winchester Disk Controller Designed for IEEE 696/S-100

OAKLAND AIRPORT, Calif. — Compupro Systems, Inc. has announced a Winchester disk controller designed for systems compatible with the IEEE 696/S-100 bus.

The controller is said to be capable of directly accessing a full 16M-byte address space. The unit can interface with Shugart Associates, Inc. SA4000, Fujitsu Ltd. 2300 and Memorex Corp. 101 series drives and is compatible with Digital Research, Inc.'s MP/M, CP/M-80 and CP/M 86.

The controller costs \$795 from Compupro, Oakland Airport, Calif. 94614.

Hard Disk System Fits Radio Shack's TRS-80

ALBUQUERQUE, N.M. — A hard disk system for use with the Radio Shack TRS-80 Model III microcom-

puter is available from J&M Systems Consultants Ltd.

The JHD-III utilizes a 5¼-in. Winchester drive with either 5M or 10M bytes of storage. The system comes with the controller, host adapter, hard disk drive, cables, adapter software diskette and operator manual.

The price is \$1,895 for the 5M-byte system and \$2,095 for the 10M-byte system. J&M is located at 137 Utah N.E., Albuquerque, N.M. 87108.

Uninterruptible Power Available from Sun

NEW DURHAM, N.H. — Three types of uninterruptible power systems (UPS) for minicomputers, microcomputers and microprocessor-based equipment are available from

Sun Research, Inc.

The Mayday fast switchable series has a 120 Hz square wave output, the Mayday60 fast switchable series has a 60 Hz sine wave output and the Mayday60+C continuous series has a nonswitching 60 Hz sine wave output.

Prices vary from \$400 to \$1,950 from the firm at Box 210, Old Bay Road, New Durham, N.H. 03855.

Series Power Supplies Has Off-the-Line Switchers

CANTON, Mass. — A 70-W multi-output switching power supply is available from Power General, Inc.

The Series 4070 power supplies are said to be true off-the-line switchers with up to four output voltages on a

single printed circuit board, designed to operate a number of microprocessor-based systems.

Two models are featured, the 4070-1 and the 4070-2. The power supply input offers pin strapable voltage ranges of either 90 to 130 Vac or, for European applications, 180 to 260 Vac at 47 Hz to 450 Hz.

Each model costs \$145 from the firm at 152 Will Drive, P.O. Box 189, Canton, Mass. 02021.

Portable Graphics Monitor Offered for Apple II, III

ARLINGTON HEIGHTS, Ill. — Amdek Corp. has introduced a portable 13-in. monitor for resolution graphics on the Apple Computer, Inc. Apple II and Apple III microcomputers. The Color III monitor has a 80-by-24-char. display.

The monitor's case is 16½-in. wide, 14½-in. high and 15-in. deep. A molded-in carrying handle allows the user to move the 32-lb. monitor easily, the vendor said. The display colors are red, green, blue, yellow, cyan, magenta and white.

The monitor has a suggested retail price of \$569 and is available from Amdek, Suite E, 2420 E. Oakton St., Arlington Heights, Ill. 60005.

Voice Command Program Designed for Apple II Unit

SAN DIEGO — An Apple Computer, Inc. Apple II-based system said to be programmable by voice command alone has been announced by Southwest Microcomputer Systems, Inc. here and Scott Instruments, Inc. of Denton, Texas.

Aimed at the nontechnical or physically handicapped person, the system combines Southwest's The Last One software and Scott's Shadow/VET voice-recognition device, which reportedly translates voice commands into computer language. The Last One reportedly creates error-free code from simple English descriptions.

The system allows a user to answer a series of English questions asked by The Last One program on a CRT screen. Shadow/VET costs \$999 and The Last One costs \$600; both are available from Southwest. The Apple II is also available through Southwest at Suite 220, 16885 W. Bernardo Drive, San Diego, Calif. 92127.

Dual Density Controller Fits Apple III Processors

SAN DIEGO — Sorrento Valley Associates, Inc. has announced ProGuard, an 8-in. dual density controller designed for Apple Computer, Inc. Apple III processors.

The unit reportedly provides up to 2M bytes of disk storage or hard disk backup for applications written for standard Apple operating systems.

The package costs \$695, the vendor said from 11722 Sorrento Valley Road, San Diego, Calif. 92121.

Davong Hard Disk System Supports Apple Processor

MOUNTAIN VIEW, Calif. — Davong Systems, Inc. has introduced a hard disk system for the Apple Computers, Inc. Apple II processor.

The unit features formatted memory capacities of 5M- and 12M bytes. The unit costs \$1,995 for a 5M-byte version and \$2,695 for a 12M-byte version.

Davong is at 1061 Terra Bella Ave., Mountain View, Calif. 94943.

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Understanding the Components Designing a Better Office Environment

By Clayton L. Parkhill

Special to CW

The computer products and communications industry will feel increasing pressure throughout the '80s to provide users with coherent plans for the sensible integration of data processing and office systems. Sensible implementation of this integration process must not only consider technique, but offer cost-effective solutions for widespread appeal.

In past articles it has been noted that user requirements in the office environment are quite distinct from traditional data processing applications. In many cases, the office systems user is less flexible and much more sensitive to the issues of speed, reliability and flexibility.

The DP community has been extremely successful in nurturing the business data processing environment for the widespread growth of interactive terminal networks. These installations have, in fact, greatly enhanced the network users' productive capacity. However, only a small percentage of the potential user population has been tapped.

Common Components

If we are to investigate the possibilities of integrating office and DP functions, we must come to a full understanding of the components involved. The central processor, the network and the user workstation are our focal points.

If we choose not to integrate the office and DP functions, we may face the duplication of all three resources. This becomes rather expensive in terms of general compatibility, duplication of support staffing and awkward operations. Moreover, these considerations do not even approach the costs involved in the hardware, software and physical configuration.

Let us analyze the three basic physical components for the

determination of an approach.

DP is becoming increasingly aware of user sensitivity to the possibility of failure at the central processing and storage unit. Interactive applications development has also brought about the reality of the relative loading of the CPU as users and applications are added to the system.

The Cost Factor

The cost factor increases disproportionately to the benefits derived in terms of response and utility as the CPU grows. Hence, we are witnessing a movement to distribute the work load by distributing computer resources. The front-end processor for communications servicing is an example of this dynamic, but only extends the practical life of the central processing resource.

The key questions reside in the limit to the practical expansion of the CPU facilities as a function of performance over cost and the increasing vulnerability of performance systems to failure, regardless of the relative reliability of the system. If the CPU is down for one hour, it affects office workers as well as DP operators and brings a 300% to 500% increase in idle personnel time.

It is painfully clear, then, that significant additional loading of the CPU is a dead end. We must explore the other components of the system for relief.

The User Workstation

Many methods are available for the distribution of loading from the mainframe to the other components in the system, such as the intelligent terminal implementation for the service of the high-priority functions in word processing. Screen refresh, block text movement and the reformatting of large sections of data are performed in the user workstation without requiring resources from the CPU.

In addition, the intelligent

terminal implementations provide security from systems failure for the protection of the locally held data. The CPU is used as a data management system, independent from the operation of the resource-intensive word processing functions.

As the additional office functions are introduced to the system, basic decisions may be made for the appropriate implementation of additional office and DP-oriented functions within the workstation, thus saving the central resources and the inevitability of major upgrades with marginal performance improvement.

The use of the intelligent workstation is an essential element to the migration of the office into the DP environment. However, the proper decision for the adoption of this method of distributed intelligence lies in the future of the system as it relates to the future of office and data processing in the not-too-distant future.

The sensible decision as to our approach to this pressing problem lies in the remaining component not yet explored in this discussion: the interactive network.

The Network

As the tremendous pressure for the integration of office and DP functions increases, we will be forced to look beyond traditional perspectives.

The environments in existence today are excellent for providing service to end users in either environment. The advent of the intelligent terminal or the off-loading of the central processing resources is a step in the proper direction. However, in the mid- to late '80s, this perspective must change to favor the functional distribution of the work load.

Much as we have effectively integrated distributed functions in the user workstation domain, the possibilities for the distribution of the intelligent functions to the communica-

tions network offer a new frontier and very much the practical evolution for the effective integration of office and DP functions.

The ever-increasing demand for the interface between processing units as the direct result of the dramatic reduction in hardware costs with respect to applications software costs necessitates the installation of significant intelligence into the interactive network. The interface must exist away from the particular environments imposed by particular hardware and software implementations.

This dynamic introduces the network as an intelligent entity in the consideration of applications implementations, much as the intelligent workstation offered so many solutions for the distribution of compute and interim working storage.

The intelligent network offers many advantages:

- *Virtual Terminal Connections.* Only one workstation is required for the access of any of the functions in the network in the true implementation of the multifunction workstation.

- *Multiple Machine Access.* Applications resident on a variety of machines are accessible from the same workstation regardless of the protocol used in the implementation of the hardware and/or software.

- *Intelligent Network Functions.* Messaging, mail systems and word processing support functions are executed without the consumption of central processing resources, while still utilizing the data and other specific resources necessary for the performance of the functions required by the users.

Decisions as to the implementation of the growth-oriented network with well-defined interfaces for all functions required will surely focus upon the versatility of the network components.

Practical limitations relating to the reasonable expansion of the central processing resource, the ultimate reliability of those resources and the proliferation of other similar resources to those in existence will force us to consider the network as more than multiplexers, modems and electrical connections.

Parkhill is vice-president of marketing at Century Analysis, Inc. in Pacheco, Calif.

Printing Terminal Boasts Buffering

PARAMUS, N.J. — A 1,200 bit/sec, 120 char./sec portable printing terminal with buffering and editing capability is available from Computer Transceiver Systems, Inc.

The Execuport 4120 BSR was designed to cut costs by reducing transmission time. It can prepare edited messages off-line for later on-line transmission at up to 120 char./sec. The terminal's memory can store a maximum of 43,000 characters.

The BSR has six commands not available on the standard model 4120: CLEAR, EDIT, LIST, XMIT, RECORD and PRINTER ON/OFF. These commands, which are used in the

same way as other 4120 commands, provide access to the editor and transmit or receive files, the vendor said.

Two fonts are available, and the BSR is offered with a choice

of modems.

The terminal costs \$3,995. Computer Transceiver Systems can be reached through P.O. Box 15, E. 66 Midland Ave., Paramus, N.J. 07652.

Text-Handling Program Out for Altos Micros

SAN JOSE, Calif. — Altos Computer Systems, Inc. has unveiled a text-handling program for its 8- and 16-bit microcomputers and the Altos 1 terminal, which it claimed reduces learning time to less than 90 minutes.

The menu-driven Executive

Word Processor package operates under the CP/M, MP/M and Unix/Xenix operating systems. It combines text editing with a spelling checker and merge-printing facility for mailing-list management.

Used with Altos' Ethernet or Altos-Net networking

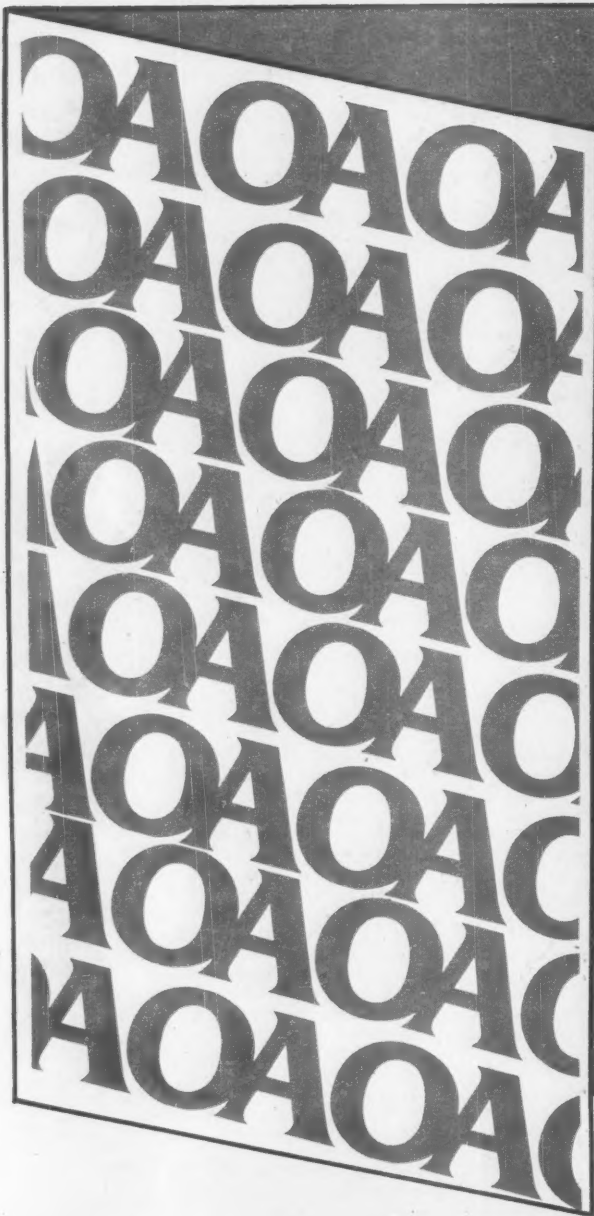
schemes, the software provides an automation system designed for large installations, which permits the sharing of files and peripherals.

The Executive Word Processor package costs \$295.

Altos is at 2360 Bering Drive, San Jose, Calif. 95131.

Coming up in *Computerworld OA*

Selling Office Automation to Your Organization



The next issue of *Computerworld OA* will focus on selling office automation within an organization. This special report will feature the human angle of office automation and highlight the strategies of selling the concept of OA to top management and end-users in an organization. You'll see articles on implementation techniques, feasibility studies, human interface, ergonomics and productivity.

And, of course, you'll see several articles on current happenings in all aspects of OA.

There will be bonus distribution of this issue to attendees of the Info '82 Show in New York this October. So, if you're a supplier of OA products and services, you won't want to miss the opportunity to advertise in *Computerworld OA's* next issue.

The issue date is September 29th. The deadline date to remember is August 20th for space reservations. (Materials are due August 27th.)

For more details on *Computerworld OA* and the people who read it, just contact your local *Computerworld* representative, or call Bob Ziegel, Vice President at (617) 879-0700 for all the information.



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MSA Downloading Mainframe Data To Micro

ATLANTA — Management Science America, Inc. (MSA) plans to release a software product in January that will enable users to download a portion of a mainframe data base to a microcomputer to perform specific applications using Peachtree software.

The firm is now in the process of developing its application network architecture strategy. The first capability to be offered in this network is the ability to make the microcomputer appear as an IBM 3270 to the mainframe. In this mode, data stored in the central data base would be offloaded to the micro. The software for downloading portions of the corporate data base to microcomputers is called Peachlink.

Similar links in the Peachtree software allow the user to perform various applications on the data.

However, the capability of sending the data back to the mainframe for updating will not be available in January, according to the company. The firm expects to add that capability sometime in 1984. But

(Continued on Page 81)

National Semiconductor Lays Off 1,000 Employees

SANTA CLARA, Calif. — National Semiconductor Corp. has laid off about 1,000 employees in its U.S. work force, a move it has avoided for the past 15 months through a series of temporary plant closings, wage freezes and productivity improvement programs.

The cuts were not made in an across-the-board action, but engineered in areas that made good business sense for the company's overall success, a spokesman said. Projects, not products were eliminated, he added, but declined to elaborate on the specific projects that were axed.

Although major cuts were made in white-collar worker positions, the largest single layoff occurred in the firm's Salt Lake City plant, a semiconductor components facility. Some 400 plant workers were involved in that reduction.

No reductions were made in the military and aerospace systems unit in Tucson, Ariz., or in the point-of-sale supermarket scanner operation here, the spokesman said. National Advanced Systems, Inc., the unit that markets and produces IBM-com-

patible systems and peripherals, had some layoffs, but the spokesman said the company would not divulge specific numbers.

"We share the view of forecasts that the general economy and semiconductor sales will continue to be flat for the next several months," said Bert Moyer, vice-president and chief financial officer, in a prepared statement.

The firm said it anticipated no further work force reductions, but it "remains watchful and flexible" about the situation. Some employees have been offered positions in other parts of the company and/or are being placed on a recall list.

"The continued success of the corporation is dependent on a return to profitability in this difficult period," Moyer added. For its latest fiscal year ended May 31, the company reported an operating loss of more than \$17 million on revenues of just over \$1 billion.

Despite the current layoffs, the firm said that it intended to spend more on research and development in this fiscal year than it did last year.

SAS Sustains 50% Growth and People Commitment

By Marcia Blumenthal
CW Staff

CARY, N.C. — "We are a research and development company that happens to sell its products well."

That is how James H. Goodnight, president of SAS Institute, Inc., views the company he founded in 1976.

Nestled in the woods and set on a small lake in the technology triangle — Raleigh, Durham and Chapel Hill — of North Carolina, SAS has had a 50% annual growth rate for the past several years and is now at the \$16 million revenue mark.

New R&D Building

Goodnight, an easy-going university type, maintains a simple office in the R&D wing of the company's expanding complex of buildings, mere steps away from the computer room. He is



CW Photo by M. Blumenthal

SAS' James Goodnight (left) and J. Michael Camp

particularly proud of the new 54,000 sq ft R&D building now under construction; he will occupy an office in that facility when it is completed. The past couple of years has

been significant for the company's growth as it added several new products, including graphics and financial modeling to its basic data management, statistical analysis and report writer system.

Quadrupled Content

Since introducing the basic SAS system, the firm has quadrupled the content of that product and has about 2,500 installations.

Last year the company sold 80,000 SAS users guides, indicating the level of usage the product has at each site. The firm has a total of 5,000 user sites. SAS/Graph, the company's graphics offering, has attracted 1,300 users since being introduced two years ago.

With all this sales activity you would expect the marketing (Continued on Page 80)

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Merger-Acquisition Activity Robust: Index

ARLINGTON, Va. — Merger and acquisition activity in the computer industry continues at a high level, with the first half of 1982 seeing 61 transactions valued at about \$201 million in cash and stock, according to the recently released Association of Data Processing Service Organizations, Inc. (Adapso). Broadview index.

Although there were more transactions in the first half of this year than in the first half of 1981, the dollar value of these deals was 18% lower than the \$244 million garnered in 57 similar transactions last year, noted Broadview Associates, the firm that compiles the index for Adapso.

The decrease in the dollar value of merger and acquisition arrange-

ments for the first half of the year resulted from the absence of a single large transaction. This parallels other acquisition-oriented industries where there has been a decrease in the number as well as the size of the deals, according to Bernard Goldstein, a partner in Broadview Associates. However, merger and acquisition activity in the computer services industry is not being sparked by the poor economic conditions. Rather, activity remains high as small and medium-size software and turnkey systems companies seek ways of obtaining financial support to sustain growth plans, he noted.

Some of the highlights of the latest index were:

- Of the 61 acquiring companies,

about 40 were publicly owned; of the acquired companies only two were public.

- Only two acquisitions were valued at more than \$20 million — Computer Associates, Inc. which acquired Capex Corp., and Continental Telecom Phone Co., which acquired STSC Corp.

• There is a trend emerging for increasing concentration within some vertical markets. In health care services, for example, McDonnell Douglas Automation Co. acquired the Medical Systems Division of Tymshare, Inc. and purchased a similar service from Bradford National last year.

- European companies are increasing their presence in the U.S. market.

Cap Gemini Sogeti of France recently purchased Spiridellis & Associates of New York.

• Major players in the industry continue to use acquisition for corporate growth. Examples of this are purchases of Associated Credit Services by Computer Sciences Corp. and the purchase of Data Processing of the South by Electronic Data Systems Corp.

Mergers & Acquisitions

McGraw Hill, Inc. has acquired the outstanding shares of **Gnostic Concepts, Inc.** for an undisclosed sum. Gnostics, which includes a wholly owned subsidiary in West Germany, will be operated as a unit of Data Resources, Inc., a McGraw Hill company.

McGraw Hill, Inc. has acquired the outstanding shares of **Systemetrics, Inc.** and its subsidiary, **Health Data Products, Inc.** for an undisclosed amount of cash. Systemetrics, a firm that maintains data bases for study and analysis of trends affecting the health care industry, will be operated as a unit of Data Resources, Inc., a McGraw Hill company.

Exide Electronics Corp. has been purchased from **Inco Ltd.** by a senior management/private investor group. Terms of the purchase were not disclosed.

United Technologies Corp. has completed acquisition of **General Dynamics Communications Co., Com Dev, Inc.** and two major operating units of **Stromberg-Carlson** from **General Dynamics Corp.** The newly acquired units will join United Technologies' Building Automation, Inc. subsidiary.

Torchmark Corp. acquired **CMI Corp.** of Troy, Mich., through the payment of \$16.7 million in cash and notes and \$3.3 million in deferred compensation, plus an agreement to make additional contingent payments based on future performance of CMI.

Anacomp, Inc. and **Astradyn Computer Industries, Inc.** have ended all discussions concerning the possible acquisition of Astradyn by Anacomp. Both firms said that a combination of business factors led to the decision.

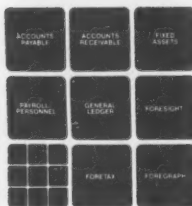
Processing Management Systems has acquired **Advanced Computer Techniques Corp.'s** Data Service Center in Phoenix, Ariz. Terms of the transaction were not disclosed.

Fireman's Fund Insurance Co., a subsidiary of American Express Co. has reached an agreement with **Kaneb Services, Inc.** to purchase their subsidiary, **ARC Automation Group, Inc.** ARC provides complete batch processing services and develops and sells preprogrammed computer systems to insurance agents and brokers.



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Networking standards.

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By now, everyone understands the need for standard communications protocols. Without them, an electronic Tower of Babel would surely ensue. But there have to be different standards for different networks. A local-area network is different from a wide-area network. A public network is different from a private one.

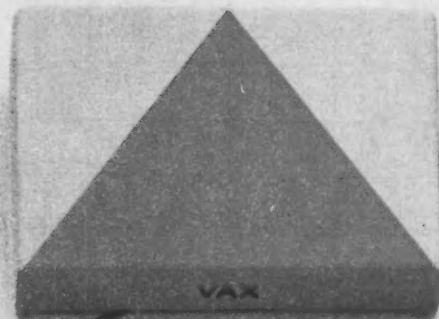
No single universal standard has emerged. Nor is one likely to. There are simply too many diverse networking environments, each fulfilling specific, mutually exclusive needs.

That's why Digital is committed to supporting and, in fact, actively promoting the more important standards now surfacing in the various environments.

Our goal is to offer our customers a range of standards to achieve any combination of networking objectives. And we've been pursuing that goal for many years.

A forward-thinking strategy.

When we first developed our networking architecture, we understood the need for flexibility.



We consciously adopted an architectural strategy that would allow our networking software to

work freely with a wide range of protocols, including some that didn't even exist at the time.

The success of that strategy is now becoming apparent. As more vendors enter the networking field, Digital is uniquely positioned to offer compatibility with the emerging protocols. We've gone farther than anyone to assure that your options are open.

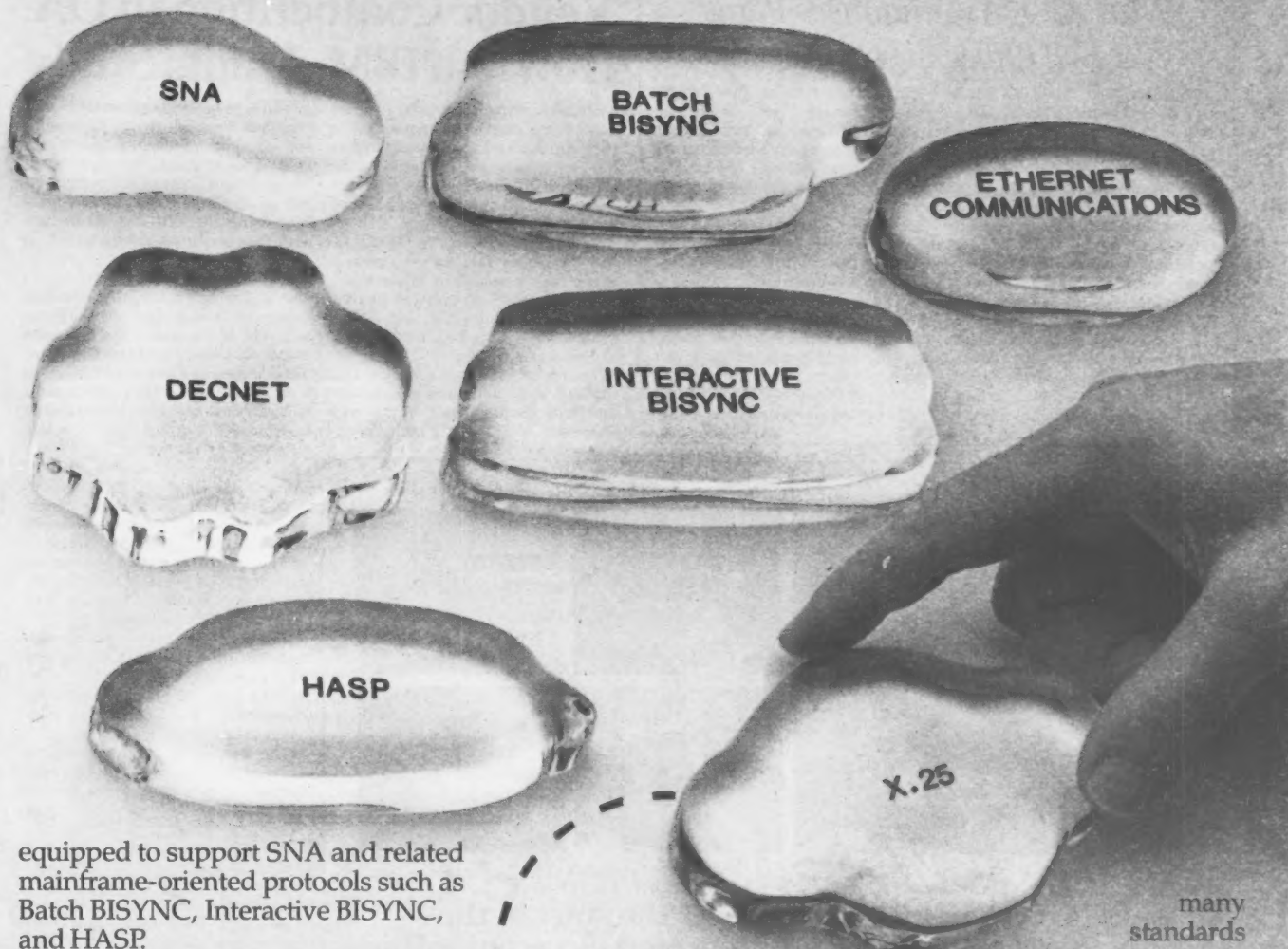
X.25 and other public networks.

Digital offers the X.25 protocol for use with public packet-switched networks such as Datapac (Canada), Transpac (France), and PSS (U.K.).

But when used with our computers, X.25 is much more than a simple link. We can provide you with the higher-level protocols that will take your systems beyond mere communications and into the sophisticated functionality that has made us a leader in networking software.

Hierarchical networks.

Even though we prefer to implement more flexible distributed networks, we are amply



equipped to support SNA and related mainframe-oriented protocols such as Batch BISYNC, Interactive BISYNC, and HASP.

Local-area networks.

Digital is one of the original sponsors of the EthernetTM* specification that has been adopted by a number of computer, semiconductor, and office equipment manufacturers. We recognized early on the need for highly reliable local-area networks. We were in on the ground floor of the definition, development and, now, the implementation of the Ethernet specification.

Distributed data processing networks.

DECnetTM, Digital's proprietary networking software, is based on a layered architecture. This is the same architectural approach followed in the model proposed by ISO. Our DECnet offers a wide range of quality networking products, products that allow such sophisticated options as adaptive path routing, down-line loading, and enhanced network management capabilities.

And so on.

We have listed a few of the

PROTOCOL

many standards we are currently supporting. There are more.

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M/A-COM Announces Plans to Sell Office Systems, Inc.

BURLINGTON, Mass. — M/A-COM, Inc. has announced plans to sell its small business subsidiary, Office Systems, Inc.

The firm acquired Office Systems, which was formerly called Ohio Scientific, Inc., about 20 months ago. Office System's product line consists of a personal computer and a variety of expandable small business systems and multi-user systems with network capabilities.

In a prepared statement, M/A-COM President Richard T. DiBona said the company is considering selling the money-losing subsidiary to a group of employees, a

joint venture with another firm or an outright sale.

The divestiture is intended to "focus the company's resources on its long-term strategic objectives" in telecommunications, according to DiBona.

The company has established an \$8 million reserve to cover expected write-downs or losses associated with the operation.

The creation of the reserve depressed M/A-COM's third-quarter financial results, causing earnings to drop to \$1.1 million or three cents per share, down from \$11.7 million or 30 cents in the comparable period a year ago.

Vendor Competition in OA Down to IBM, Wang: Study

Vendor competition in the office automation market has narrowed to IBM and Wang Laboratories, Inc. to the exclusion of most other vendors, according to the results of a recent study conducted by Strategic, Inc. of San Jose, Calif.

Wang Laboratories, Inc. — *The Key Issues* concludes that while Wang is currently the leader in this market, there is a lot of support for an IBM OA system among users, and IBM is expected to push into the OA forum on that wave of interest.

The report analyzes Wang's OA strategy and maintains that while IBM will counterattack, Wang will retain 40% to 45% of the large corpo-

rate sites in which it currently has an installed base of word processing and/or data processing machines. From this position, the study said, Wang should account for more than 20% of the large corporate OA market during the '80s — well in line with the company's objectives.

Similar Study

In a similar study, the Yankee Group of Boston also views Wang and IBM at the top of the OA sales charts, followed closely by Datapoint Corp., Xerox Corp. and Digital Equipment Corp. "They are currently in the best position" to offer what the consulting group dubs "the five office systems segments."

The segments that the Yankee Group broke OA down into include:

- The communications processor, providing communications between the office and the outside world.
- The utility processor, providing local data base control, program development, program storage and large applications management.
- The advanced peripheral, providing printing, storage, scanning and other functions.
- The local network, providing transparent communications between the pieces in the office.
- The user workstation, providing the user link to other office segments.

Challengers in OA

Challengers to the top three, the Yankee Group claimed, are Hewlett-Packard Co.; Prime Computer, Inc.; Data General Corp.; Sperry Univac; NCR Corp.; Honeywell, Inc.; Burroughs Corp.; NBI, Inc.; CPT Corp.; Lanier Business Products; Exxon Enterprises, Inc.; and Lexitron/Raytheon Data Systems Co. They also foresee AT&T, Harris Corp. and Northern Telecom Ltd. potentially playing a major role in the OA system market.

The Yankee Group's survey of 10,000 users indicates that users are only now making OA strategy plans.

The 280-page Strategic report costs \$1,500 and can be obtained from the company at Suite 215, 4320 Stevens Creek Blvd., San Jose, Calif. 95129. The Yankee Group's study is part of its Communication/Information Systems Planning Service, priced at \$11,500. The group is based at 89 Broad St., Boston, Mass. 02110.



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Nickels & Dimes

The David Jamison Carlyle Corp. (DJC) has signed a letter of intent with Lex Services, Inc., a wholly owned subsidiary of Lex Service PLC, London, England, to enter into a combination equity and financing transaction. Lex's \$10 million investment includes cash, convertible loans and bank financing guarantees in return for 20% to 25% ownership of DJC. If the four-year convertible loan notes and common stock purchase warrants are exercised, Lex will own 51% of the firm.

SYSTEMS THAT WORK TOGETHER NOW

Claims Settlement Forced

DPS Drops Trade-Secret Charges Against TAP

By Bob Johnson

CW New York Bureau

DALLAS — A recent court battle here between two DP security firms ended quickly when Data Processing Security Inc. (DPS) dropped all theft-of-trade-secret charges it had brought against its neighboring rival, Total Assets Protection, Inc. (TAP).

On July 30, after only three days of courtroom testimony and with only one witness taking the stand in the Tarrant County, Texas, District Court, DPS withdrew its \$7.5

million lawsuit against TAP. In a letter of apology to TAP, DPS President Louis Scoma Jr. stated that the accusations against TAP were "factually unfounded and morally inexcusable."

However, Scoma, who was the lone witness, claimed he was forced into the settlement because of a TAP legal maneuver, which subpoenaed all of DPS' business records and put a "stranglehold" on his company's daily operations. He claimed that 17 five-drawer file cabinets

and 87 file boxes of DPS information were produced and would have been "locked in court" for 18 months had the trial continued.

Scoma also claimed that the case's presiding judge, James E. Wright, did not allow DPS a "fair trial," because he denied DPS motions to have TAP's subpoena for the information ruled "overbroad." He also cited Wright's later refusals to grant DPS motions that would have allowed portions of DPS files returned so it could continue business.

Mudslinging

TAP President J.C. Matlock Jr. replied that he would rather not partake in any post-trial "mudslinging" and maintained that TAP simply subpoenaed information that DPS claimed was trade secrets or confidential business information, which TAP allegedly stole or misappropriated.

"The trial speaks for itself. TAP's hands are clean. We are happy that it has been resolved and we just want to get down to the business of supplying information security and services," Matlock said.

The litigation between TAP and DPS had its roots early in 1980 when Matlock, then an executive at DPS, and two other DPS vice-presidents, Thomas Bailey and Laurence B. Compton, left the 11-year-old firm to start their own DP security business. According to a TAP attorney, Cecil E. Munn, the three men left DPS because they were "disenchanted" with DPS' business ethics.

Scoma claims that he fired Matlock because he, Bailey and Compton "conspired" to start a competitive business while employed at DPS. He said that Bailey and Compton left voluntarily.

The legal problems arose after the formation of TAP early in 1980. When employed by DPS, Matlock, Bailey and Compton were required to sign a noncompete and nondisclosure agreement that prohibited them from competing with DPS in the U.S. for two years in the event of termination. It also said that they could not disclose any company confidential information for five years.

The TAP principals referred to the pact as a "slave agreement," which they were forced to sign or be fired. Scoma, however, said that all DPS employees sign the agreement to safeguard research information. He said that the "uniqueness" of

the business (which he claimed DPS started) necessitates these measures.

After TAP was incorporated, company officials filed a declaration in Texas District Court seeking a judgement as to whether the noncompete agreements signed by the three men were valid documents. DPS then filed a temporary injunction against TAP claiming the former employees did in fact violate

their agreements and should be enjoined from doing business until the case could be tried.

The District Court granted the injunction in July 1980, which forced TAP out of the U.S. and into Canada. During an eight-month stay in Canada the company mounted a successful appeal of DPS' injunction and forced the case into the Texas Supreme Court in March 1981.

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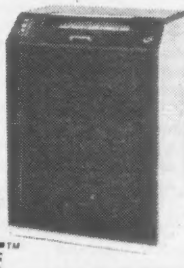
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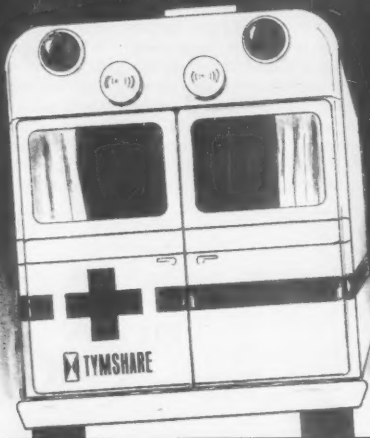
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SAS Expanding Products, Starts Portable Systems Unit

(Continued from Page 73)

team to be out pounding the pavement. But not at SAS, where all marketing is done by telephone by a 10-member marketing group, some of whom have had little DP experience, said J. Michael Camp, vice-president

of marketing. Besides keeping overhead down, keeping the sales staff at home base is less disruptive on families, he said. And SAS is definitely committed to keeping employees happy (See related story).

This sales strategy also keeps the price of the product low — \$5,000, with \$2,500 for a renewal. With a renewal rate of 96%, the company knows it is doing something right. In operating the company, Goodnight claimed he doesn't examine what the competition does, "we just do what we feel is right."

Adding to its expanding repertoire of products, the company has just formed a new Portable Systems Division that will concentrate on making the basic SAS product as well as newer products run on a variety of 32-bit minicomputer systems. The firm recently released a version of SAS for Data General Corp.'s MV series of superminis [CW, July 5]. And secreted away somewhere in the SAS complex is a Digital Equipment Corp. VAX-11 system, which, no doubt, will be the next system for which SAS will be adapting its products, probably by next spring.

Developing SAS for 32-bit minicomputer systems was the No. 1 request of the firm's users. "It was a surprise to me that our IBM base of users wanted portability to other machines," Goodnight remarked.

SAS Product Design

Goodnight credited his firm's continued fast-paced growth to the original design of the basic SAS product — a data base system with a file management language that is relational in concept. "We haven't added the extra programs, which include human engineering features, to create indexed files automatically," he added, explaining the difference between SAS and a full-blown data base management system. And for the foreseeable future SAS does not intend to become a competitor in the data base management system arena.

Nor does the company expect to delve into the applications market. "We build modular rooms that allow you to do forecasting, but they are not canned programs," Camp explained. "When you build an application, you are telling users how they must do something, thus imposing a limit." Once the users create an SAS data set, they can call in about 100 applications procedures to develop their own applications.

Besides product design, Goodnight thinks the current corporate demand for DP services is increasingly changing the role of the computer professional from hands-on systems developers to consultants to end-user departments.

Non-DP professionals are also becoming an integral part of the systems evaluation teams at companies, he observed. One of the company's customers, Brunswick Corp., recently sent a decision support systems group to SAS, which included a financial specialist.

The upswing in this phenomenon recently spurred the company to add a new course on basic DP to its educational offerings.

SAS Combines Work and Play



CW Photo by M. Blumenthal

Students at SAS/Care prepare for lunch.

CARY, N.C. — Care to go for a run during the day on a jogging track through the woods, take a dip in a nearby lake, play racquetball or grab a gourmet lunch in the company cafeteria?

If you worked at SAS Institute, Inc. here you could do all those things.

"We're very family-oriented here," explained James Goodnight, the company's president. While Goodnight minimizes the "country club" atmosphere conjured up by the company's employee benefits program, he is undeniably proud that people enjoy the atmosphere surrounding the firm. Recently, that environment was the subject of an *Evening Magazine* segment aired on a local television station.

SAS/Care

One of the more interesting aspects of the employee benefit package is a Montessori school called SAS/Care that is located on the company's premises. Right now the school has 25 enrollees and more are planned, along with a new building. SAS pays for the tuition, while employees pay for the children's meals.

But despite SAS' benefits, some employees were disgruntled — about the shortness of the jogging course, that is. Accordingly, SAS management made amends, expanding it from one-third of a mile to a full mile, which darts in and out of the piney woods surrounding the company's lakeside property.

Although the company is now at the \$16-million revenue mark and growing at 50% annually, Goodnight sees no reason why his firm cannot retain its people-oriented environment.

Aimed at Users, Not Programmers

Software House Puts Documentation On-Line

By Lois Paul
CW Staff

DEERFIELD, Ill. — With the increasing demand for on-line software programs, it seems a natural progression to provide on-line documentation.

At least that was the feeling of Friedman & Associates, Inc., a custom software house here that recently began providing on-line documentation with the IBM System/38 and 4300 software it developed for its clients.

"The problem with documentation is that you write it, but nobody looks at it," Mark Lieberman, a consultant with Friedman & Associates explained. "What we are doing is making documentation available to the user on-line so he doesn't have to go to a book. Not only that, but he can change everybody's copy simultaneously."

The documentation provided with the firm's order entry, manufacturing control, purchasing and other software applications is aimed at end users rather than programmers. "We have ceased providing user manuals," Lieberman said. "What we have told people is that if they care to print out all the stuff that is in there, they can do so. Nobody has."

Daubert Industries, an Oak Brook, Ill., firm that is involved in a variety of businesses, including chemical manufacturing, is one of the dozen Friedman clients who have received the on-line documentation.

Systems and programming manager Harry Dombrowski reported the

switch has been a successful one. Daubert has been working with Friedman & Associates since January on the development of accounts receivable, custom master maintenance, order entry and general ledger software for use on its IBM System/38. In early spring they received the on-line documentation for the programs and, to date, it is working very well.

"For the on-line applications, all the user has to do is press a HELP key on the terminal. They organized the text so that the first thing that displays are the key words involved in performing the program function," Dombrowski explained. The user

then is guided through the functions that are available, such as adding, changing or deleting. When the user is working with a batch program, the HELP function is a menu item that can be selected.

"The on-line HELP text is maintainable on-line," he said, adding that it also saves time and money in republishing the manual as well as providing paper updates.

"It is much cleaner and faster," he added. In the past, programmers might have stacked a number of changes for inclusion later in the manual. "Now it is different. You plug it in, and next time people hit the HELP key, it is there."

Lieberman said his company has found that developing on-line documentation improves the quality of the product. "It tends to force you to write documentation more the way you would write a newspaper article — putting the most important thing at the top, and so forth — because there is only so much that will fit on a full screen," he reported. "That is not the way you write typical user documentation. It tends to amble along."

To date, the firm has a total user base of about 50 for its software for the IBM System/38 and 4300. Only 10 to 12 of these have on-line documentation.

MSA Plans Peachlink

(Continued from Page 73)

summary data calculated on the mainframe with Peachtree software will be able to be transmitted for updating on the mainframe at selected times. This will be accomplished via a batch processor feeding the mainframe.

The thrust of the strategy is to make executives and professionals more productive by giving them the ability to access the corporate data base.

To prepare for the eventual availability of the Peachlink capability, which is the critical feature of the strategy, MSA recently announced a bundled version of its Peachtree micro software called the Executive Peach Pack. This incorporates current Peachtree offerings of spelling/proofreader, thesaurus, dictionary and Peachcalc.

In addition, the announcement included the addition of the expected Peachlink software as well as business graphics capability, a mailing list manager and a module called the Business Simulator, which is a training aid for managers and professionals.

The bundled package costs \$3,000 and is available in units of 10. There is a 5% discount for orders in excess of 10 units, the firm said.

The company is located at 3445 Peachtree Road N.E., Atlanta, Ga. 30326.



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Orders & Installations

Henco Software, Inc. has sold 11 copies of its software system, Info, to the U.S. Department of Energy's Western Area Power Administration in Golden, Colo.

Precision Visuals, Inc. has received an order from Standard Oil of Ohio for the installation of up to 30 DI-3000 systems over the next two years. Standard Oil will use the systems in oil exploration, petroleum engineering, planning and analysis and business graphics.

McDonnell Douglas Automation Co. has reported its first sale in India of one of its Unigraphics computer-aided design/manufacturing units. The Central Machine Tooling Insti-

tute of Bangalore has purchased the unit, which includes a design station, processor, two modules for milling and multiaxis matching, a paper-tape reader/punch and a hard-copy unit, for \$118,600.

Cray Research, Inc. has received its first order for the Cray X-MP/22 supercomputer from Digital Productions of Los Angeles. The leased system, which is valued at \$12.6 million, will be installed in late 1983.

ECS Telecommunications, Inc. has sold its VMX/16, a digital voice store-and-forward system, to Security Pacific National Bank of Los Angeles.

• Marc C. Joseph has been named group vice-president of business development for the Software Group of University Computing Co., a subsidiary of the Wyly Corp.

• Michael G. Vidnovic has been appointed vice-president of product operations for GTE Telenet Communications Corp. and Lawrence M. Freidman has been named vice-president of marketing for GTE Telenet Information Services.

• Robert F. Wickham has resigned as vice-president of marketing for Vector Graphics, Inc. Company President Frederick A. Snow has temporarily assumed responsibility for marketing operations.

• Thomas F. Vinci has been named vice-president and general manager

of U.S. Sales and Services Department of General Electric Information Services Co., a wholly owned subsidiary of the General Electric Co.

• Marshall Hart has been named vice-president, quality, for Verbatim Corp.

• Robert P. Lawrence has been appointed vice-president of North American sales for Priam Corp.

• Charles D. Kempton has been named vice-president for worldwide marketing and sales; Jun Sato, vice-president, engineering; and Suresh Panikar, director of engineering for Televideo Systems, Inc.'s Computer Systems Division.

• Joseph A. D'Angelo has been appointed vice-president for computer-aided design and manufacturing systems at Prime Computer, Inc.

• Carl L. Holder has been appointed vice-president of sales and promotion for Innovative Computer Products, Inc.

• James J. Jacobs has been appointed vice-president and controller for GTE Corp.'s GTE Data Services.

• Joseph W. Farrelly, Edwin C. Millsap and E. Linwood Pearce have been appointed vice-presidents of Applied Data Research, Inc.

• Milton G. Wetzel has been named vice-president of Data Services at On-Line Business Systems at the full-service data center facility in Santa Clara, Calif. He will be in charge of the data center operations.

Wetzel previously was with Wells Fargo as vice-president and manager of the Data Processing Division supervising statewide data center operations for the bank.

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And this October 27th's *Computerworld Extra!* on "Computer Systems" will give you all the ammunition you need to be in the front ranks. You'll get the whole picture in terms of just what this explosion in new hardware is beginning to mean to the DP/MIS person.

This October's *Extra!* is going to put the advances in hardware and the implications of those advances together in a meaningful way for the DP/MIS manager. Take a look at just some of the topics you'll be reading about this Fall:

- A close — and candid — look at the Japanese challenge
- New computer systems — these articles will span everything from a computer you can throw in your briefcase right up through 32-bit and mainframes
- Future chip technologies
- Leasing

- Peripherals — new technologies and advances in everything that hooks up to a CPU
- Database machines
- Personal computers invading the corporate environment
- Graphics
- Lasers

And you'll get a great story on the Epcot (Experimental Prototype Community of Tomorrow) Center — the new amusement park opening in September with computer technology by Sperry Univac. This is computer technology that will affect the community of tomorrow.

If you sell to Vice Presidents, Directors, DP Managers and other MIS professionals, here's where you'll find your buyers this October 27th. *Computerworld Extra!* will be read by more than half-a-million computer-involved readers including 116,988 paid subscribers, (ABC 12/31/81) and 423,720 pass-along readers (Becker Research Corporation).

CW *Extra!* advertising close is September 17 and we'll be glad to give you more advertising information — as well as complete details on our subscribers and readers. Just contact your local *Computerworld* sales office or call Don Fagan, Vice President Sales, at (800) 343-6474. In Massachusetts call (617) 879-0700.

Contracts & Pacts

Miltop Corp. will supply peripherals including the HSP3609-212AS line printer, RD-45 rigid disk drives and DD400 series flexible disk drives under Honeywell Information Systems' \$602.9 million Snap I Phase II Program contract with the U.S. Navy.

Infolink Corp. has been awarded a \$1.7 million subcontract by Ford Aerospace and Communications Corp. under a \$18.5 million contract for the development and installation of a maintenance job-tracking system at all of the Air Force's air logistic centers.

M/A-Com Video Systems, Inc. has signed an OEM agreement with Artel Communications Corp. to market a full line of fiber-optic video/audio/data transmission systems to the broadcast and industrial communications industries.

Intel Corp. and Nippon Electric Co. have signed a five-year cross-licensing and technology-exchange agreement under which Intel will license and provide compatibility updates to NEC on Intel's 8253 and 8259A peripherals and both companies will work to ensure the compatibility of their independently developed Cmos versions of Intel's 8048/8049 microcontroller architecture.

COMPUTERWORLD

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Anacomp Closes R&D Deal To Develop Cibs by 1984

INDIANAPOLIS — Anacomp, Inc. said it completed arrangements earlier this month for a software research and development partnership by fi-

Supershorts

nalizing the closing of a \$26 million partnership underwritten by Shearson/American Express, Inc.

The partnership will contract with Anacomp to develop the Corporate International Banking System (Cibs), a proprietary software system designed for use by banks and large financial institutions engaged in international business.

Anacomp said it expects to complete the development of Cibs by late 1984. The firm will also market Cibs, if successfully completed, and have the option to purchase the system from the partnership at a later date.

Cipher Data Products, Inc. has established a wholly owned subsidiary, Cipher Data Products GmbH, near Munich, West Germany.

RCS Service Co. has integrated the marketing and sales activities of its telephone systems and data service businesses into a single division — Telephone Systems and Data Services.

Octal, Inc. has formed a new division, CAD Service Bureau, which will offer data base conversion services using software packages developed by Octal and running on its Digital Equipment Corp. VAX-11 and PDP-11 systems. Two levels of service will be offered: one providing a one-week turnaround and another, an "express" service offering 48-hour turnaround.

Control Data Corp. has opened a Cybernet Services office and public terminal facility at 4701 Agers, Minneapolis, Minn., to provide engineering and scientific computing services to area businesses. Programs in structural analysis, process simulation, mining modeling, financial analysis and data base management are offered as well as customized programming and counseling services. The facility, which includes batch and time-saving terminals and a plotter for use by customers in processing jobs, will be available to customers 24 hours a day.

Information Science, Inc. (Insci) is offering color graphics capabilities through the integration of Computer Pictures Corp.'s color graphics system into Insci's payroll and personnel software programs.

The Electronic Devices Division of Rockwell International Corp. has established a remote design center in San Diego to support planned expansion of its semiconductor line. The center, which employs 19 design engineers working on VLSI logic and circuitry, has already completed its first chip design.

Fujitsu Ltd. will start making sam-

ple deliveries in August of the world's smallest and fastest 64K-byte dynamic random-access memory (RAM). Mass production will begin in October. Sadao Inoue, general manager of the firm's semiconductor group, said that the new product is 37% smaller than existing 64K-byte RAMs and up to 1.5 times as fast.

Telemedia, Inc. has formed a new division, the Computer Technology Group, to provide education, training and consultation in new areas of computer technology. Initial offerings will be training in Bell Laboratories' Unix and computer-aided design and manufacturing education.

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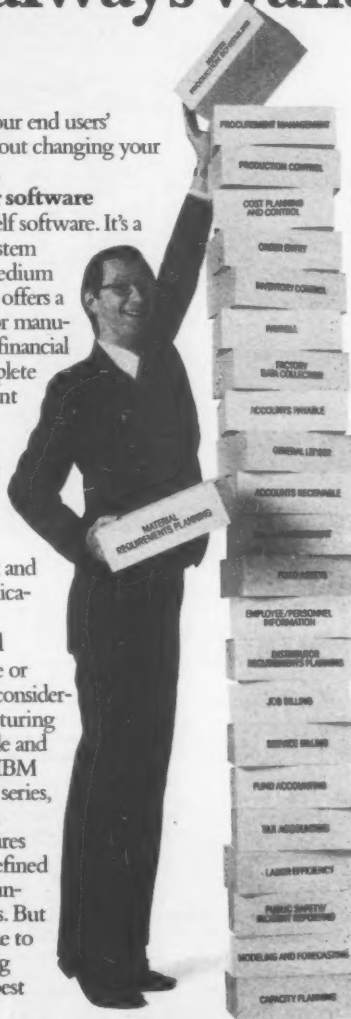
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C8/16

Harris Corp. has received a \$60 million subcontract from Rockwell International Corp. to produce an electronic data handling system for the U.S. Air Force's B-1B bomber.

Nordata, Inc. has signed a three-year contract with Honeywell, Inc. for the purchase and resale of Honeywell's DPS 6 minicomputers and peripheral products. The contract has a potential value of up to \$20 million.

Threshold Technology, Inc. has signed an agreement with Siemens Corp. to develop a voice verification device for Siemens that will prevent unauthorized access to data base management and telephone.

Honeywell, Inc.'s Information Systems' Customer Service Division will provide maintenance and service for Systcoms, Inc.'s Mpac line of packet-

switching data network products under the terms of a recently signed agreement.

IBM is now marketing Executive Technology Data Systems' (ETDS) System/34 financial planning and modeling system. ETDS will provide customer support under the vendor-licensed program arrangement and will also continue to market the package.

Toshiba America has signed a two-year agreement with Star Computer Systems to distribute nationally Star's full line of applications software through its dealership network. The software will be available for Toshiba's T-100, T-200 and T-250 micro-

computers.

Zilog, Inc. and MAI/Sorbus Service have signed an agreement under which Sorbus will provide contract maintenance for Zilog's systems products through 1983. Cities initially covered by the agreement are New York; Philadelphia; Miami; Houston; Detroit; Seattle; Denver; Norfolk, Va.; Louisville, Ky.; Syracuse, N.Y.; and Washington, D.C.

Micropolis Corp. has received an OEM contract for 8-in. Winchester disk drives from Siemens AG, Munich, West Germany. The five-year contract, which is valued at \$5 million to \$10 million, calls for all Sie-

mens divisions to purchase all six models of the Micropolis 1200/1220 series drives with the Micropolis intelligent interface.

American Data Systems, a computer systems marketer specializing in turnkey systems for insurance brokers, has selected Micro Five Corp.'s Series 3000 as its featured computer system.

TRW, Inc. has become the exclusive service representative for Micromation, Inc.'s Mariner and M/System computer systems in the U.S. Under the terms of the agreement, TRW will provide Micromation end users with free, total on-site maintenance for 90 days after installation.

Honeywell, Inc.'s Federal Systems Division has been awarded a 10-year, \$602.9 million contract by the U.S. Navy for the installation and support of over 1,800 DPS 6 processors, more than 33,000 CRT terminals and 26,000 associated printers.

Terminals Unlimited (TU) has been awarded two contracts, totaling \$8.6 million, by the U.S. Air Force for the delivery of up to 2,000 printers and for 53 TU Series 100 systems.

Intergraph Corp. has been awarded a \$5 million contract, with options that can increase the contract to \$8 million, by the U.S. Defense Mapping Agency. Details of the contract were not disclosed.

Cynthia Peripheral Corp., the North American marketer for Honeywell Cii Bull of Paris, has been awarded a \$3.8 million contract to supply Marcey, Inc. of Van Nuys, Calif., with Cynthia D100 series disk drives.

General Electric Co.'s Installation and Service Engineering Division has signed a contract with Spectra Logic Corp. to provide nationwide maintenance service for the firm's emulating disk and tape controllers used with Digital Equipment Corp. and Data General Corp. minicomputer systems.

American Satellite Co. will establish three full-duplex 56K bit/sec circuits for data transmission between Fort Meade, Maryland and installations at Fort Campbell, Kentucky; Hunter AAF, Georgia; and Fort Lewis, Georgia under the terms of a five-year contract with the Defense Communications Agency. The contract is valued at \$2 million.

Dynatrend Inc. has been awarded a three-year support services contract valued at \$3.5 million by the U.S. Department of Energy/Fossil Energy.

ATM Network Management Corp. has signed an agreement with On-Line Financial Services, Inc. for its SATM program to provide ATM/POS support to savings and loan associations serviced by On-Line Financial.

Digilog Business Systems, Inc. has signed an agreement with Indeserve, an organization of independent service companies, to provide a national maintenance program on its line of small business computers and printers.

Contracts & Pacts



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CICS/VS - Systems Administrator

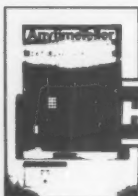
- Candidates should have at least five years of experience in large-scale design and implementation projects under CICS/VS.
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EDE M/F

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Applications and nominations are being accepted for the position of Director of Computing Services at Swarthmore College. Director reports to the Vice President of Finance and is responsible for the coordination of all campus computing activities.

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Position requires extensive familiarity with academic and administrative computing in a higher educational environment and five years of progressively responsible experience. Must be technically proficient and able to work effectively with members of the student body, faculty and administration. Successful candidate will have demonstrated leadership ability to plan, organize, and carry out the management of a computing center.

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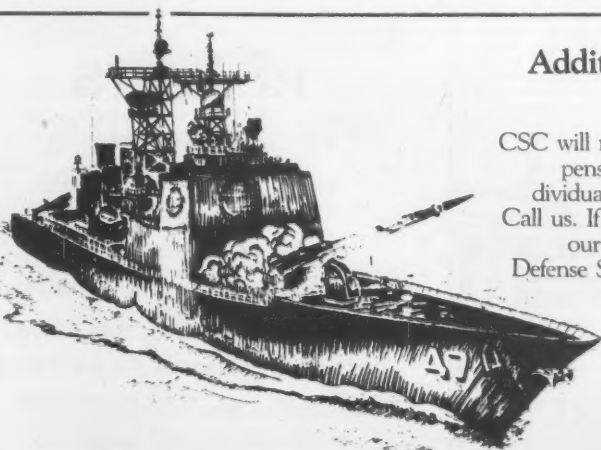
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BASIC REQUIREMENTS. The requirements are implicit, but as minimum include at least 5 years applicable experience, bachelor's degree or equivalent, and extensive CS coursework in combination with consulting, management or similar functions. You should have a good grasp of large scale hardware, structured systems, data base, and the personality and depth to be effective in leadership, interfacing with users, and training.

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SYSTEM ANALYST

The Department of Computing Services at the University of Arkansas, Fayetteville is accepting applications for senior level System Analysts. Staff expansion is due to major development efforts in the student records and financial areas. The position requires a strong COBOL background using IBM software in a real-time teleprocessing environment. The applicant must have the ability to interface with all levels of the user community. The Fayetteville campus is located in the scenic Ozark mountains of northwest Arkansas. Send resume and salary history to:

**Director of Computing Services
210 Hotz Hall
UNIVERSITY OF ARKANSAS
Fayetteville, AR 72701**

The University of Arkansas is an Equal Opportunity/Affirmative Action institution.

Systems & Programming Supervisor

United Refining Company, a 60,000 barrel per day refinery located in Warren, PA, has an immediate opening for a Systems and Programming Supervisor. We are seeking an experienced energetic professional with 4 plus years interactive data processing experience. The position requires a degree and experience in systems analysis and supervision of a small programming staff. Major system involvement will be on a Prime 750 with peripheral systems with a DEC 1140 and an IBM Series I. Major responsibility include supervising the programming functions, implementing of new systems and coordinating outside consulting services. If you qualify and are interested, send a resume to:

**United Refining Co.
Attention: Mr. Lawrence A. Leugle
P.O. Box 780
Warren, PA 15365
EEO**

RSX-11M Systems Programmer Dallas Texas

The future of computer graphics for the printing industry may be rewritten by technology developed at our large facility here in Dallas. We cannot wait for technology to catch up with our needs. We must move ahead and create technology which will rewrite the manuals in this exciting new field. If your interest and expertise match our needs, you may become a part of this emerging reality. Our prime candidate must possess a minimum of 2 years experience under RSX-11M operating systems. System utilization is DEC-PDP/11 series mini computers. Languages used are PASCAL and MACRO-11. This individual will be responsible for programming a complete output system, within a printing graphics environment. Familiarity with computer graphics, image processing or photo typesetting would be a plus. This position provides a competitive salary with long term benefits. For more information call (214) 837-2800, Ext. 482 or send resume to Rick Borrelli, Taylor Publishing Co., 1660 W. Muecklingford Lane, Dallas, TX 75235.

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Our client company is offering an outstanding growth opportunity to start as the Senior Systems Programmer with growth to manager of technical support. You will have direct input to decide and design departmental policy. Environment is IBM 370 DOS/VSE VM370 IDMS. Very attractive starting salary and benefits. Will relocate. For further information please call Mr. A. Casandra Collect (203)522-1176 or forward resume to:

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(504) 524-3773

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**Dr. W.J. Birnes
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SIGNAL/IMAGE PROCESSING ENGINEER - Duties include the development of signal processing, pattern recognition and image processing methodologies for non-destructive testing, manufacturing process automation, high speed inspection, and robotics. A strong engineering background is desired.

GRAPHICS RESEARCHER - Duties include the design and development of innovative graphical techniques and user interfaces for analyzing large complex data sets. Applicants should have experience with sponsored research and good communication skills. Minimum three years' experience with PhD in Computer Science desired.

COMPUTER SYSTEMS MANAGEMENT - The position involves technical and administrative support of distributed minicomputer systems. Duties include user consultation, systems software support, long-range technical and business planning, equipment and software acquisition, and associated administrative duties. A degree in Computer Science or Electrical Engineering and two years' experience with DEC VAX minicomputers is required.

MANAGEMENT INFORMATION SYSTEMS - Application and systems level positions using Relational Database Technology to implement a comprehensive Information Resource Management System. BS in Electrical Engineering/Computer Science or Business is required. Experience in MIS/IRM and relational technology highly desirable.

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Pacific Northwest Laboratories
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SYSTEMS DEVELOPMENT MANAGER

THE POSITION:

To establish, manage and control all information system development, application packages and data base services in a sophisticated information, Computing and Telecommunications Division of the Petrochemical Industry in Venezuela.

QUALIFICATIONS:

- Minimum of ten years experience in a primarily large/medium IBM compatible computing environment with solid background in systems analysis and design, systems development standards and productivity techniques, applications development under IDMS and at least four years in management or supervisory capacity.
- Degree in Computer Sciences, MBA, or Engineering.
- The successful candidate should also have: strong supervisory and interpersonal skills, ability to train and develop subordinates and proficiency in project management.
- Fluent Spanish.

THE COMPANY:

The Company provides, competitive salaries, comprehensive benefits, a challenging development program and is rapidly developing wide international prestige because of its handling of the Petrochemical industry in Venezuela.

All applicants should write to:

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Live in sunny El Paso, an area noted for five year around climate, clean air, low taxes and lack of urban congestion. If you are a college graduate, have 2 to 5 years programming experience, are comfortable working in an on-line data base application environment and know the current methodology for programming and analysis, The University of Texas at El Paso may have an opening for you. To find out more call (915) 747-5445, or mail a resume and salary history to: Personnel Department, University of Texas at El Paso, El Paso, Texas 79968.

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Baptist Medical System of Arkansas, a 1100 plus bed multihospital system is seeking a Director of Application Development. This 15 person department is part of the Information Systems Group and has full responsibility for development of all new user application systems as well as enhancements to existing systems.

The current configuration consists of dual host processors (IBM 4341/3031) running under MVS interfaced with additional minicomputers for some user areas. Approximately 300 on-line terminals, both local and remote are supported via CICS. Existing application systems are on-line oriented and integrated into the patient care, financial, and support functions for all hospitals and associated physicians groups. Upcoming areas of activity include replacement of financial and patient care systems, distributed processing and continued upgrading of personnel technology and equipment.

The individual selected will be a major resource in the design of comprehensive information systems to support the continued success and expected growth of the Baptist Medical System. We are looking for a proven performer. If you qualify, please contact:

**Employment Manager
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If you are our type of dinosaur, please call or send your resume to:

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We are now looking to appoint the following computer professionals:

MANAGER — APPLICATIONS SOFTWARE \$3328 Per Month Tax Free*

The applications software activities are organized into functional areas with specific user requirements to satisfy. Managers are responsible for developing and maintaining project schedules, allocating resources to achieve objectives, enforcing program standards and system development methodologies, and assisting users define their requirements for system enhancements and/or new systems. Applicants should have strong project management experience in developing, implementing and maintaining online COBOL applications for an airline; familiarity with airline flight operations, accounting, personnel or planning functions beneficial. A degree in computer science or business administration and at least 8 years of relevant experience desired; prior use of structured analysis/programming techniques and system development methodologies preferred.

MANAGER — SUPPORT SOFTWARE \$4393 Per Month Tax Free*

The support software function provides technical assistance to programmers, computer operators, and management in the areas of IBM operating systems, database management software, system utilities, and telecommunications. The Manager will supervise and direct the activities of three project managers; in addition, he will participate in the planning of future hardware requirements, the evaluation of system software products and programmer productivity aids, and the selection and administration of technical training programs related to support software. A bachelor's degree and at least 6 years experience with IBM JCL, Assembler, and COBOL required; extensive MVS, CICS and DBMS experience necessary, as well as a thorough understanding of the latest IBM hardware and software approaches for supporting large-scale data base and teleprocessing applications.

MANAGER — DATA BASE ADMINISTRATION \$4393 Per Month Tax Free*

The data base administration (DBA) function is responsible for the planning and implementation of computerized data bases, including the establishment of a data dictionary and standards for data access/security. The manager's role is to formulate policies, procedures and standards relating to data base management systems (DBMS); to monitor transaction activity and computer utilization; and to participate in application planning activities. He will be expected to build and train a staff to support the airline's long-term Information Systems Plan. A bachelor's degree and at least 6 years DBMS experience preferred; knowledge of data dictionaries, IMS DB/DC and/or TOTAL, and COBOL required.

PROJECT MANAGER — OPERATING SYSTEMS \$3325 Per Month Tax Free*

The MVS operating system supports normal production systems, both online and batch. In addition, a VM/CMS environment is planned for system development, testing and training. The Project Manager will be responsible for generation, maintenance and upgrading of these operating systems as well as providing technical support and advice to system users; he will supervise the activities of a group of systems programmers. Applicants should have an associate or bachelor's degree in computer science and a minimum of 5 years of experience with IBM operating systems.

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Please call COLLECT to Chris Kumlín (602) 949-3759 or send your resume to:



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DATA PROCESSING MANAGER

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To establish, develop and control an organization capable of developing, implementing and maintaining effective data processing and industrial office automation capabilities in the largest petrochemical plants of Venezuela (Maracaibo). To interface with central offices in all matters pertaining to corporate applications, software and hardware plans, and organizational matters.

QUALIFICATIONS:

- Minimum of ten years experience in a primarily large/medium IBM compatible computing environment with proficiency in applications of technical nature (Petrochemicals, Refining) and engineering.
- Degree in Computer Sciences, Business Administration or Engineering.
- Proven experience with DP technical management and systems analysis and design.
- Ability to train and develop subordinates.
- Fluent Spanish.

THE COMPANY:

The Company provides, competitive salaries, comprehensive benefits, a challenging development program and is rapidly developing wide international prestige because of its handling of the Petrochemical industry in Venezuela.

All applicants should write to:

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CARACAS, 1010-A
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3808 W. Broward Blvd.
Ft. Lauderdale, Florida 33312
305-584-4404 (Collect)

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Systems Programmer

White Stores Inc. Retail/Wholesale Automotive Hardlines chain located in Wichita Falls, Texas, is seeking a Systems Programmer to help upgrade our data processing area. The successful candidate will have a minimum of 2 years systems programming experience with IMS DB/DC in an MVS environment. Must have some knowledge of TSO/SPF procedures. Proven track record a must, degree preferred. Whites offers excellent compensation, benefit and relocation package. Send confidential resume and salary history to:

White Stores, Inc.
3910 Call Field Rd.
Wichita Falls, TX 76308
Attention Russell Crawford

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It's basic Canon thinking—in our product technology and the exciting careers we offer.

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Our data processing department offers you an outstanding state-of-the-art environment where team work is the rule. We encourage creativity. Not inhibit it. So if you're intent on working with a technology leader, look into a Canon career.

DATA PROCESSING MANAGER

Plan, implement, and be a major part of our total operations. You'll deal with outside vendors and manage overall direction of the department, including input/output control, on-going maintenance of applications, technical support, and problem management.

Prior management experience and at least 10 years in a sophisticated computer environment is required. Experience with an IBM 4300 or 3030 CPUs operating under DOS/VSE with an on-line CICS and IMS or IDMS data base is vital. You must also demonstrate creativity and an ability to communicate with all levels of personnel. Problem-solving abilities are also essential. A college degree in Computer Science is desirable. (Dept CW 7).

TECHNICAL SUPPORT MANAGER

You'll install and handle on-going maintenance of systems programs, solve technical problems, and be responsible for communications lines and equipment control.

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Responsibilities include installation and on-going maintenance of Data Base Management System (IDMS/DB), monitoring and tuning Data Base, developing procedures, documentation, and establishing overall standards. You'll also interface with vendors, train technical staff members, and assist in the design and implementation of new systems.

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You'll be responsible for the installation and on-going maintenance of VTAM and NCP, as well as the control of communication lines and equipment.

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Responsibilities include quality control of programs and JCL, as well as troubleshooting for problems caused by misoperation, down machines, JCL errors, and program errors. You'll also help train junior programmers.

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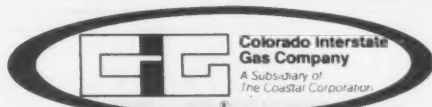
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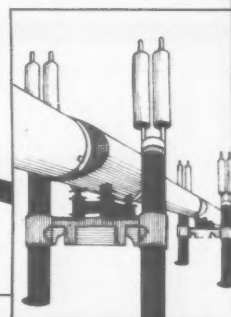
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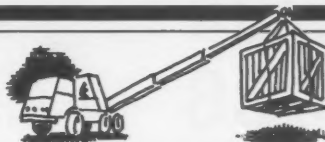
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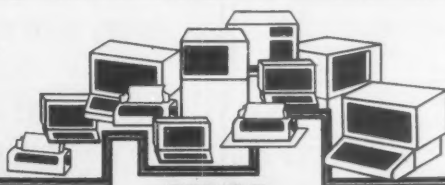


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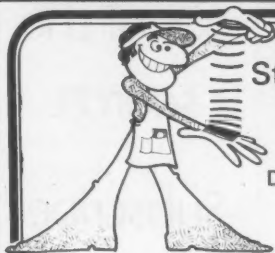
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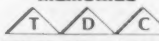
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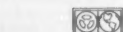
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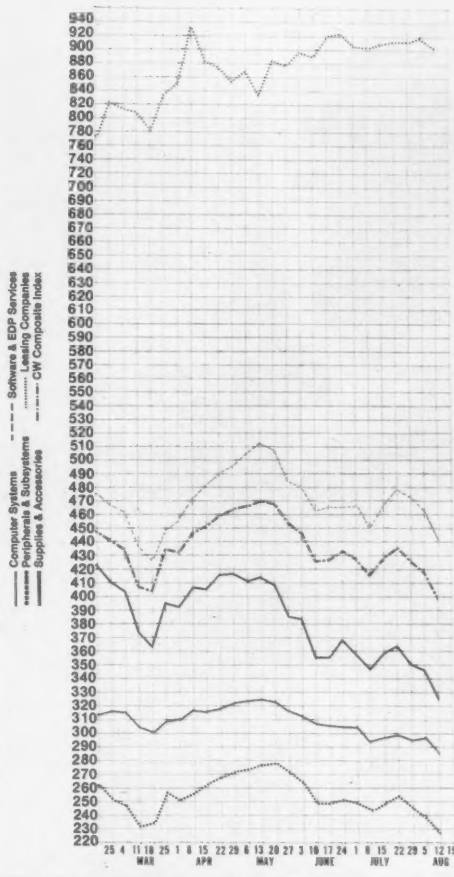
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Computerworld Stock Trading Summary

CLOSING PRICES WEDNESDAY/AUGUST 11, 1982

All statistics compiled, computed and formatted by TRADE QUOTES, INC. Cambridge, Mass. 02139

PRICE					PRICE					PRICE				
	1981-82	CLOSE	WEEK	WEEK		1981-82	CLOSE	WEEK	WEEK		1981-82	CLOSE	WEEK	WEEK
RANGE	RANGE	AUG 11	NET	PCT	RANGE	RANGE	AUG 11	NET	PCT	RANGE	RANGE	AUG 11	NET	PCT
(1)	(1)	1982	CHNGE	CHNGE	(1)	(1)	1982	CHNGE	CHNGE	(1)	(1)	1982	CHNGE	CHNGE
COMPUTER SYSTEMS														
A ANDAHL CORP	18-46	19 1/4	-1 3/4	-8.3	D ADVANCED COMP TECH	1-8	1 1/2	-1/4	-14.2	A COMPUTER CONSOLES	16-28	20 3/4	+1/2	+2.4
N BURGESS CORP	28-72	30 1/8	-7/8	-2.8	D ADVANCED SYSTEMS INC	10-15	10 1/4	-1	-8.8	D COMPUTER DEVICES INC	4-10	8 3/8	-1 5/8	-16.2
D COMPUTER AUTOMATION	8-28	8 5/8	-1/8	-1.4	D AGS COMPUTERS INC	7-10	7 1/2	-1/8	-1.6	D COMPUTER TRANSLIVER	2-9	4	1/2	+11.1
N CONTROL DATA CORP	18-42	21 1/2	-2 1/4	-9.4	D ANACORP INC	10-19	10 1/8	+1/4	+2.5	N COMPUTER/VIDEO	20-49	20 5/8	+1/2	+2.4
N CRAY RESEARCH INC	20-49	21 7/8	-3/8	-1.6	D ANALYSTS INTL CORP	3-14	6 1/2	+1/4	+4.0	N CONRAC CORP	17-28	23 3/4	-3/8	-1.5
N DATA GENERAL CORP	22-87	22 1/4	-2 7/8	-11.4	D APPLIED DATA RES	13-25	21 1/2	+1/8	+5.0	D DATA ACCESS SYSTEMS	2-15	1 3/8	-1/8	-8.3
N DATAPoint CORP	11-68	11 5/8	-7/8	-7.0	D ASK COMPUTER SYSTEMS	11-17	14	-1	-6.8	A DATAPRODUCTS CORP	16-44	16 1/8	-7/8	-5.1
N DIGITAL EQUIPMENT	62-113	62 3/8	-1 1/2	-2.3	B ASTRADYNE CORP INC	1-5	1 1/4	-1/8	-9.0	D DATARAP CORP	4-15	6 1/2	-1/2	-7.1
A EECO INC	8-19	8 5/8	-1/2	-7.0	N AUTOMATIC DATA PROC	22-32	22	-1 3/4	-7.3	D DAIHIC INC	2-9	1 5/8	-3/8	-18.7
N ELECTRONIC ASSOC.	5-13	7 7/8	-3/8	-4.5	D CGA COMPUTER ASSOC	4-12	10 1/2	-1/2	-8.3	D DAVID JAMISON CARLYL	2-7	7 1/4	-3/4	-25.0
N FLOATING POINT SYST	13-30	16 1/2	-2	-10.8	D COMPUTER ASSOC INT'L	12-20	17 1/2	-1 1/2	-7.8	D DECISION DATA COMPUT	3-6	5 3/8	+1/8	+2.3
N FORBORG	22-62	22 1/8	-2 1/8	-8.7	D COMPUTER HORIZONS	1-3	2 1/2	0	0.0	D DELTA DATA SYSTEMS	1-4	1	-1/8	-8.3
D FULCRUM CORP GRP	1-3	1 1/4	0	0.0	C COMPUTER NETWORK	4-9	3 3/4	+1/8	+2.2	N ELECTRONIC R & M	3-9	3 3/4	-1/2	-11.7
D GENERAL AUTOMATION	5-18	3 3/8	0	0.0	N COMPUTER SCIENCES	11-30	11 3/4	-7/8	-6.9	D EVANS & SUTHERLAND	18-40	19 3/4	-1	-4.8
N HARRIS CORP	31-60	24 1/2	-1 5/8	-6.2	D COMPUTER TASK GROUP	10-23	10 1/4	-1/4	-2.4	N GEN'L DATA CORP INC	7-18	6 3/4	-2 3/8	-26.0
N HEALEY-PACKARD CO	33-54	28 1/4	-3	-7.2	D COMPUTER USAGE	2-10	2 5/8	0	0.0	D GENERAL TERMINAL CP	0-4	1/4	0	0.0
N HONEYWELL INC	63-115	83	-3 1/2	-4.2	D COMSERV CORP	8-16	11 3/4	-1 1/4	-9.6	D GREAT SOUTHWEST IND	1-12	3	-1/4	-7.8
N IBM	48-73	62 3/8	-3 1/4	-4.9	C COMSHARE	8-21	5 3/4	-1/8	-2.1	N HAZELTINE CORP	19-35	25 3/4	+1	+4.0
D ICL SYSTEMS INC	5-13	5	-1/2	-9.0	N CULLINANE DATABASE	15-37	25 5/8	-1 3/8	-5.0	D INFORMATION INTL INC	9-17	11 1/2	-1 1/4	-9.8
D MAGNUSON CORP SYSTS	2-32	1 1/2	-1/4	-14.2	D CYCARE SYSTEMS INC	8-14	8	-1/4	-2.7					
N MANAGEMENT ASSIST	7-26	7 3/8	-1 3/4	-10.1	D DATA DIMENSIONS INC	1-3	3/8	0	0.0	D INTEL CORP	21-51	28 1/2	-3 1/4	-10.2
D MINI-COMPUTER SYST	0-6	3/8	-1/8	-25.0	D DATATAC	1-4	1/2	-	-11.1	D IPI SYSTEMS INC	5-15	5	-1/2	-8.0
N MODULAR COMPUTER SYS	7-32	7 1/8	-1/8	-1.7	D DYATRON CORP	2-11	3 1/2	+3/8	+12.0	A LUNDY ELECTRONICS	7-10	9	-7/8	-8.8
N MINIMAX DATA SCI	10-32	11 1/2	-1/8	-1.0	N ELECTRONIC DATA SYST	15-30	25	-1 1/2	-5.6	A RSI DATA CORP	11-27	14 3/4	-3/8	-2.4
N NCR	38-76	49 5/8	-2 3/8	-4.5	D INFORMATICS INC	10-23	10 1/8	-5/8	-5.9	D NETWORK SYSTEMS CORP	14-25	17 7/8	-1/8	-0.8
N PERKIN-ELMER	18-38	17 3/4	+1/8	+0.7	D INSYTE CORP	1-3	2 3/8	-1/8	-5.0	D OREX	3-8	3 1/2	0	0.0
N PRIME COMPUTER INC	15-40	16 3/4	-3/8	-2.1	D IPS COMPUTER MARKET	1-2	1 1/8	-1/8	-10.0	N PARADYNE CORP	25-52	26 3/8	0	0.0
N SENTRY CORP	21-65	21	-5/8	-2.6	D KEANE ASSOCIATES	4-8	4 1/4	-1/4	-5.0	A PENRIL CORP	7-17	8 1/8	-3/4	-8.4
D TANDEN COMPUTERS INC	13-35	13 1/4	+1/4	+1.5	D LOGICON	12-38	13	-7/8	-6.3	D RAMTEK CORP	6-23	14	-1	-6.8
N TEXAS INSTRUMENTS	71-151	01	-2 7/8	-3.4	D MNOT SCI ANER INC	17-25	18 3/4	-1/2	-2.4	N RECOMITION EQUIP	4-21	4	-1/8	-8.5
A WANG LABS.	22-46	25	-1 5/8	-6.1	D MATHEMATICAL INC	8-17	12 1/4	-1 1/2	-10.8	D SCAN DATA	1-5	1 3/8	+1/8	+10.0
					D MATHEMATICAL APP GRP	13-28	12	-1	-7.1	N STORAGE TECHNOLOGY	18-40	16 3/8	-3/8	-2.2
					D NATIONAL DATA CORP	13-28	14 3/4	0	0.0	D STRES DATATECHNICS	6-34	11 3/4	-1 1/4	-8.6
					D PANOPTIC SYSTEMS	8-15	10 1/4	-1/4	-2.3	A T BAR INC	7-18	7 1/2	-1/8	-1.8
					D PLANNING RESEARCH	5-13	9 3/4	-3/4	-11.5	A TEC INC	4-11	8 1/2	-1/2	-5.0
					D PROGRAMMING & SYS	1-7	1 3/8	0	0.0	N TEXTRONIX INC	38-70	38 1/8	-2 1/2	-6.4
					D REYNOLDS & REYNOLD	18-26	19 1/2	-1/2	-2.5	N TEXTEL	5-10	7 5/8	-3/4	-8.8
					D SFT CORP	13-30	15 3/4	-1 1/4	-11.1	D TESDATA SYSTEMS CP	5-17	3 1/4	+1/8	+4.0
					D SHAW MEDICAL SYST	20-37	27 7/8	-1 1/8	-3.8	D TIMEPLEX INC	7-18	8 3/8	-1/2	-5.8
					D STSC INC	8-28	10 1/2	+1/2	+9.0	D VISION TECHNOLOGY	10-15	11	-3/4	-6.2
										D WILTEK INC	1-3	1	0	0.0
LEASING COMPANIES														
D BOOTHE FINANCIAL CP	18-29	22 1/4	0	0.0	C SCIENTIFIC COMPUTER	5-16	6 5/8	-3/8	-5.3	SUPPLIES & ACCESSORIES				
N CORDISCO INC	18-27	19 3/4	-1 5/8	-8.3	D SOFTWARE AG	5-23	5 1/2	-1/2	-8.3	N AMERICAN BUS PRODS	11-17	12 3/8	-3/8	-2.9
S COMMERCE GROUP CORP	1-1	5/8	0	0.0	N TINKHARE INC	13-30	15	-7/8	-5.5	D BALTHUS BUS FORM	1-2	1	-	-
D COMPUTER INVOING GRP	1-2	3/8	0	0.0	N URS CORP	10-18	10	0	0.0	N BARRY WRIGHT	14-24	14 1/4	-2	-12.3
D CONFIDENTIAL INFO SYS	4-9	8 3/8	-1/4	-3.0	N WVLV CORP	7-20	7 7/8	-1 7/8	-19.2	D CYBERNETICS INC	1-2	1	0	0.0
D DFF INC	5-13	8 3/8	-3/8	-4.2						N DUPLEX PRODUCTS INC	12-17	13 5/8	-1/4	-1.8
D ITEL	1-3	5/8	0	0.0						N ENNIS BUS. FORMS	15-23	10 7/8	-1/8	-0.5
D LEASAPAC CORP	1-2	1/8	0	0.0						N JCR COMPANY	48-65	51 5/8	-2 5/8	-4.8
N U.S. LEASING	18-30	23	-1/4	-1.0						D MOORE CORP LTD	25-30	20 1/2	-3/8	-1.2
										N WASHA CORP	3-23	9	1/2	+4.0
										D STANDARD REGISTER	30-43	41	-1 3/4	-4.0
										A TAB PRODUCTS CO	12-30	12 1/4	-1/8	-1.0
										N WALLACE BUS FORMS	22-38	28 3/4	-1/4	-0.8
PERIPHERALS & SUBSYSTEMS														
N AM INTERNATIONAL	1-15	1 1/8	0	0.0										
A ANDERSON JACOBSON	9-26	9 1/4	0	0.0										
D AUTO-TROL TECHNOLOGY	0-62	9 3/4	-1 1/2	-13.3										
D BANCAT INC	7-35	7	-3/4	-9.6										
D BEEHIVE INT'L	5-18	4 5/8	0	0.0										
A BOLT-BERANEK & NEW	0-25	13 1/2	-1	-6.8										
D CANEIT CORP	5-11	3 1/4	-1/8	-6.8										
N CENTRONICS DATA CORP	7-40	7 3/8	-3/8	-7.8										
A CETEC CORP	4-8	4	-1/8	-3.0										
D COMTECHNICS	2-11	3 1/4	-1/8	-3.7										
D COMPUTER COMMUN.	1-2	2	+1/4	+50.0										

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